HANDBOOKS FOR PHYSICIANS.

ON SYPHILIS,

AND ITS TREATMENT WITH

SUBCUTANEOUS SUBLIMATE INJECTIONS.

BY

DR. GEORGE LEWIN,

PROFESSOR AT THE FRIEDR.-WILH. UNIVERSITY, AND SURGEON-IN-CHIEF OF THE SYPHILITIC WARD FOR SKIN DISEASES, CHARITÉ HOSPITAL, BERLIN.

TRANSLATED BY

CARL PRŒGLER, M.D., AND E. H. GALE, M.D.,

SURGEONS U. S. ARMY.

WITH ILLUSTRATIONS.

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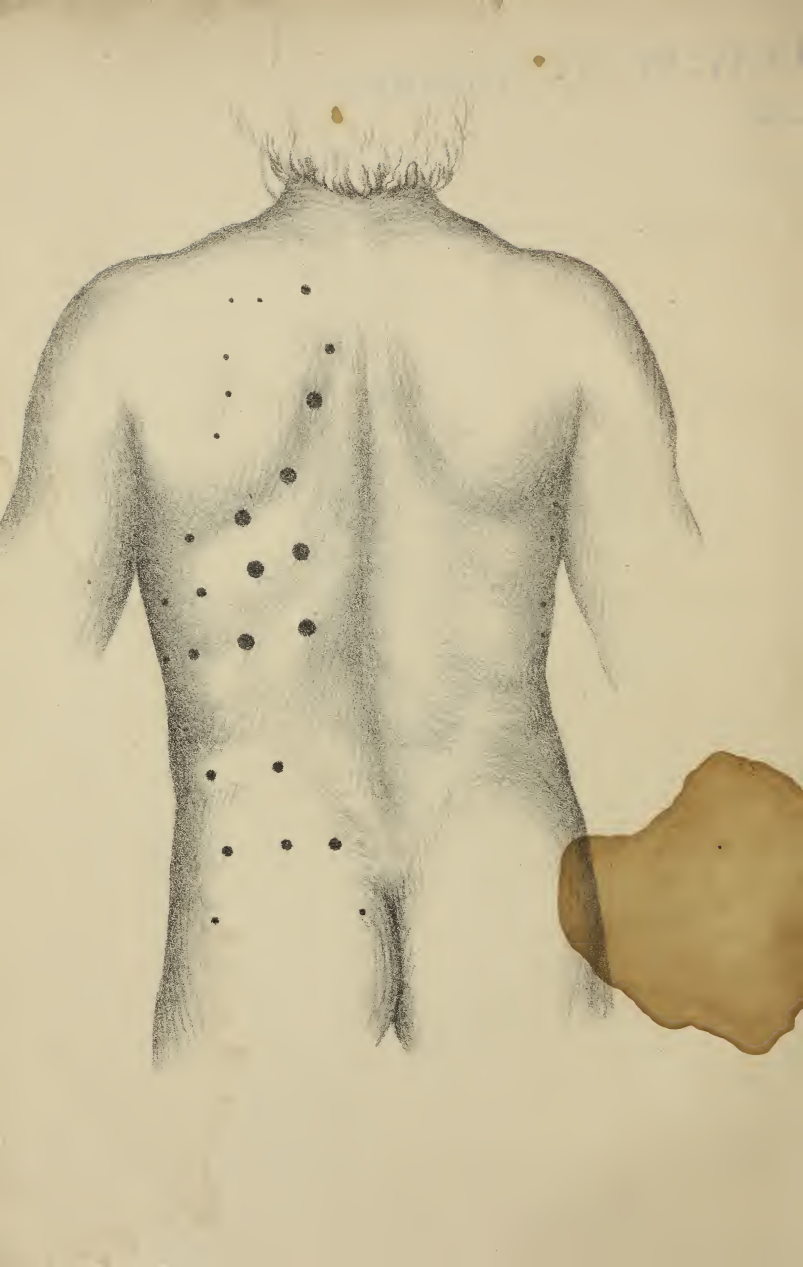

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1012 WALNUT STREET.

1882.

Dedicated

TO HIS

HIGHLY ESTEEMED COLLEAGUE

DR. NICOLAUS KOSLOFF,

PRESIDENT OF THE IMPERIAL RUSSIAN MEDICAL AND SURGICAL ACADEMY,
MEMBER OF THE MEDICAL COUNCIL OF THE SECRETARY OF THE
INTERIOR, MEMBER OF SEVERAL LEARNED SOCIETIES,
ETC., ETC., ETC.

AS A TOKEN OF HIS ESTEEM.

TRANSLATORS' PREFACE.

One of the translators having witnessed the successful workings of the subcutaneous use of sublimate in the cure of syphilis, at European hospitals; both translators having had pleasing results in the number of cases treated here in private practice,—together with the well-known standing of Professor Lewin in all matters pertaining to syphilitic diseases, they have been induced to translate the result of his experiments in the Venereal Wards of the Royal Charité Hospital, Berlin, and lay them before their American readers.

We hope our fellow-practitioners will receive the views advanced as to pathology and treatment, with the same spirit as have some of the best surgeons in Europe. And trust whatever of value inheres in his conclusions will be tested and adopted.

While we do not think that the hypodermic method is the *only* way to eradicate syphilis, still, in many cases, we think it the best, inasmuch as it is speedy and sure.

All who are opposed to introducing large quantities of

mercury into the system cannot fail to endorse this method, if the drug is to be used at all,—since from $1\frac{1}{2}$ gr. to $2\frac{1}{2}$ gr. of sublimate are sufficient for a cure on an average.

The tables and statistics given are very instructive; the report of cases is full and accurate in details of treatment and diagnosis; the deductions seem logical and conclusive.

We have aimed at accuracy, rather than elegance, in our rendering, and hope the defects of the translation will not be viewed too critically.

P. & G.

Aurora, Illinois, August 1, 1872.

PREFACE.

NEARLY seven years have elapsed since I introduced the subcutaneous sublimate injection into the syphilitic wards under my charge of the Royal Charité Hospital, Berlin. During this time I have treated by this new method upwards of 2000 patients, including my private practice.

The very favorable success of the method may justify me in responding to the numerous wishes of my colleagues here and elsewhere. And I present here to the reader my work laid down in the 14th volume of the Charité Annals, condensed and improved.

I remarked there the advantages of my treatment, especially the quickness and precision of the results, the small amount of relapses, &c., and more than all those theoretical arguments; I give here the following statistical data, which speak for themselves.

In Berlin the law exists that every woman given to prostitution may be under *police surveillance*, and those who lead a suspicious life have to be examined weekly, and any exploration giving a warrantable proof of syphilis, gives the examining surgeon the right to send them to my syphilitic

wards. I have treated all these women exclusively, since March, 1865, by my new method, and their number already is about 1400.

At the end of July, 1869, there had *not been more than* 20 *female patients who had returned to my wards on account of syphilitic relapses*, which were of a very light character, as the following cases will show.

But I am far from thinking, notwithstanding its remarkable results, that the injection method is the only cure to be adopted, and I earnestly protest against such a onesidedness on my part.

I express my profound obligation to all my colleagues, who, unbiased and with a scientific zeal, have tried my new method; especially would I name Regimental Surgeon Derblich; Dr. Gruenfeld, assistant to Professor Siegmund, at Vienna; Professor Bamberger, Wuerzburg; Dr. Bergson, Professor in our University, and Dr. C. W. Richter.

LEWIN.

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THE

TREATMENT OF SYPHILIS

WITH

SUBCUTANEOUS SUBLIMATE INJECTION.

I. DEFINITION.

By the new method, introduced by me, Syphilis may be destroyed, in its various forms, when the remedy is brought in contact with the system in the form of hypodermic injections of corrosive sublimate. This method has the advantage over other anti-syphilitic cures, inasmuch as it requires no preparation of the system for, nor any after-cure in consequence of, the medicine taken, because we can proceed at once *in medias res*, without losing any time whatever.

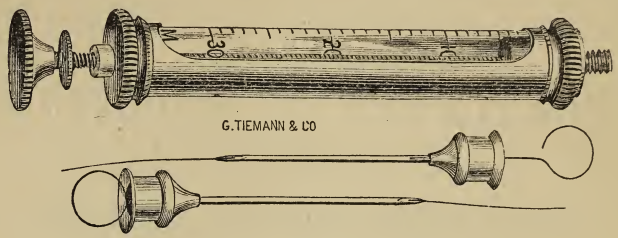
II. THE MANNER.

I. INSTRUMENT.

The instrument used is a syringe, modified by Dr. Lewin and manufactured by Geo. Tiemann & Co.,* New York. It

* They have constructed, by our request, a hypodermic syringe, according to Lewin's modification, and we recommend the instrument to the profession, as an improvement upon the one in common use.—Translator's Rem.

is essential to have this modified instrument, a drawing of which accompanies this book. In private practice each pa-



tient ought to have his own "needle," which must fit the syringe used by the practitioner, so that no possible chance of infection may exist. It is always a duty before using the syringe to be sure it is in working order, because it is a needless torture for the patient, if you insert a clogged and unclean instrument. Great precaution and circumspection are necessary on the part of the physician. To preserve the good condition of the syringe, it is best to use distilled water for cleansing it; care being taken that no fluid remain in the glass tube, which may be effected by repeated workings of the piston.

The needle should be dried, blowing every particle of water out of it; use watch-makers' oil to keep it from rusting, inserting a bristle instead of gold or silver wire.

The operation itself is the same as with any other subcutaneous injection. The cuticle ought to be raised, and the point of the syringe pushed into the middle of the cellular tissue, thus elevated. Be careful and not penetrate so deeply as to injure the muscle, neither go too superficially, because the medicated fluid remaining in the tense and unyielding stratum of cuticle, will not be absorbed, but give rise to inflammation and sloughing of the part; therefore it is of

vital importance that the medicated fluid be deposited in the meshes of the cellular tissue. I saw quite a good many sick, brought to the Charité Hospital, who were covered on their backs and chests with deep-seated abscesses, complaining of much pain, without my being able to detect any effect brought about by the injection of the sublimate; on the contrary, seeing plainly that the syphilitic taint was in full bloom. Such cases, brought about through ignorance, may give rise to misunderstandings and distrust against the efficacy of the injection.

In persons with a good deal of fatty tissue (*panniculus adiposus*), the skin sometimes cannot be raised in a fold, but, without trying repeatedly, the "needle" of the syringe may be boldly inserted from half an inch to an inch, according to the adipose tissue. I never noticed in such subjects, abscesses. Generally speaking, there seems to be less susceptibility to inflammation.

In drawing the needle out, put your finger immediately over the aperture and compress it, and by gentle rubbing, the injected fluid will be equally distributed in the tissue. This is indispensable for preventing any loss of the fluid, because such a loss is of importance, taking the smallness of the injection into account. If there should be any bleeding, it will be proper to close the opening with adhesive plaster, but generally digital compression will suffice.

II. PLACE FOR INJECTION.*

Generally speaking, we find on all places of the body, the same readiness of absorption, since salivation occurs readily

* By examining the cut accompanying this work, there may be seen the regions best adapted for inserting the injections.

from almost any place. Since I fail to find any difference as to locality, I seek parts that are the least sensitive, and am guided solely by this consideration. The less sensitive a place of the body is, when the tissues are punctured, the less will the part inflame, and hence the better suited for our purpose. This condition prevails in the infrascapular and sacral regions. I have allowed my patients to designate, themselves, the special point in these regions. Most of them selected the infrascapular, it being not so sensitive, and the muscles coming but little into play while moving the body. Here the nerve inosculations are more sparsely disseminated. Should these spaces be insufficient on account of the repeated injections, the adjoining regions, or even the chest has to be taken. There is no danger of abscesses here, but patients complain of pains darting into the upper extremities, and even numbness, which passes off in a few hours.

The sacral region is not very sensitive, but the skin is sometimes so adherent that a fold is hardly to be raised. Better is the region of the *gluteii muscles*, and especially for such persons as are used to horseback-riding, because of the hardness of the parts. But the needle needs to be inserted rather deeper here, and compression ought to be made longer at the aperture, because the fluid escapes more easily than at other points.

With most patients, the *infrascapular region* was best adapted to our purpose. The pain was seldom much greater than in other places mentioned above, and I have not seen any abscesses arise here. They have occurred in other regions, as on the anterior part of the forearm, which is usually not very sensitive. With severe cases, which have to lie in bed, the lower extremities may be used, and ought

to be preferred instead of the back, on account of the *decubitus* of the patient.

We should avoid those regions where there is a *collection of glands*, because tedious and chronic abscesses may follow, as the *regio cervicalis*, *submaxillaris*, *inguinalis*, *cubitalis*.

Whether an already injected place ought to be again used, depends largely whether or not infiltrations or indurations have been formed. With some patients infiltrations, after use of the syringe, occur but slightly, and quickly disappear; with others, they stay for a longer time, and are, on that account, a contra indication.

It is interesting that such infiltrations seem to compress the sensitive nerves even to anæsthesia, a reinsertion of the needle causing no pain. On this account patients have a predilection for such parts where, if reapplied, sometimes ulceration of the tissue may be induced.

MEDICATED FLUID FOR INJECTION.

I use for injections these three solutions of different strength:

1. 3 grains to one ounce of water.
2. 4 " " " "
3. 6 " " " "

More concentrated solutions than No. 3 cause often intense local inflammation and sensitiveness, and abscesses form. Weaker solutions than No. 1 have too little effect, and have to be repeated too often. Which of the solutions to use in any single case, must be determined by idiosyncrasy of the patient, sensitiveness, susceptibility, &c. Generally, I prefer in practice the middle strong solution, and with patients in Charité Hospital, I use it mostly.

In private practice, considering many circumstances, I prefer to begin with the weakest solution, getting gradually to the stronger one, especially in patients who are very susceptible to pain and in a rather weakly condition. In patients where symptoms of weakness are predominant, it is necessary to find out whether the debility is a product of the syphilis, or is induced by weakening causes, such as insufficiency of food, exhaustive discharges, &c. Should it be advisable to purge a healthy, robust individual, it is best to begin with the weakest solution, continuing it till at least the more concentrated ones can be applied. But I use the concentrated solution in those patients mentioned above (patients who have been reduced by syphilis), even if their state of strength might be considered by a novice a counter-indication for every mercurial cure. In such cases the injection of sublimate shows triumphant results, even if the pain induced by the concentrated solution is quite severe, and wears on the patient. It will be of but short duration, and the patient who has hitherto been pale and worried, gets a better color and a better skin, noticeable even to a non-professional eye. He himself assures you he feels quite improved.

I use the stronger solutions in those cases where the skin tolerates it and other indications demand a heroic treatment. Those indications are given either by the dignity of the organ which is syphilitically affected (and I mean here especially the brain, the larynx, the eye), or by a threatening, intense course of syphilis, such as the phagedenic condition of an ulcerating, broken-down venereal sclerosis. Those affections which have existed in long and neglected syphilis, especially gummy tumor of the scrotum, *tophi* of the bones, &c., require th e concentrated solution. The curative pro-

cess commences very soon with them. We may use the stronger solutions in cases of slight syphilis, if the patient is willing and can endure the pain, or if urgent social reasons are predominant.

To mitigate the pain attending any of the named solutions, morphia, with or without glycerin, may be added. The amount to be given varies from $\frac{1}{10}$ grain to $\frac{1}{8}$ grain, judging by the symptoms, if larger doses are demanded. And I may mention here that in some cases a combination of morphia and the sublimate had a narcotic influence, following more quickly than in ordinary cases. In some cases it was the reverse. Every one who has experimented knows the difficulty in obtaining exact and uniform results.

DOSES.

Concerning the partial doses for every administration of the injection fluid, the smallest dose is $\frac{1}{10}$ gr. sublimate and the highest $\frac{3}{8}$ gr. These *minimum* and *maximum* doses I but seldom overstep, and the same are sufficient for most cases for one and the same day. In several exceptional cases I have used, experimentally, $\frac{3}{4}$ gr., and even a grain per day; but we must, in these instances, be on the alert for appearances of intoxication, which I shall more fully describe by and by.

Which of the two doses ought to be used, depends on two circumstances: first, on the individuality of the patient; and second, on the gravity of the case.

Concerning individuality, with weakly subjects, we begin with the weaker, and with healthy ones, with the stronger dose. In the course of the treatment, a good deal depends on the sooner or later commencement of the mercurial

stomatitis, or the susceptibility of the patient; and by this we may know whether to increase the dose or not. In all cases where *lues* threatens important organs, higher doses are imperatively indicated, as already said. In most cases I do not inject more than the contents of a Pravaz syringe in one place (the same as a half of my own, viz.: 15 grains). But if I wish to use more, I inject *in two places somewhat distant from each other.* Very often I *take opposite parts of the body.* By this means greater doses may be injected at once; but if circumstances allow it, they ought to be divided into two or three sections of the day, at intervals of three or four hours.

III. ON THE APPEARANCES OCCURRING AFTER INJECTIONS.

I. LOCAL APPEARANCE.

a. Inflammation.—The injection of the sublimate is soon followed by more or less redness, diffused around the opening, accompanied by a swelling, which seems to arise chiefly from the depth of the subcutaneous tissue, where the sublimate has been deposited. A more or less tense infiltration forms, which slightly elevates the non-affected surface above the level of the surrounding. While the traumatic, superficial erythema disappears quickly, the induration remains a longer time. With some patients spontaneous involution follows; with others, knotty hardness remains for quite a while. The cause of these differences lies in the individual idiosyncrasies which generally characterize the ability to withstand traumatic influences. But, in time, the most obstinate knot will disappear, as I have seen with all

patients discharged with some swelling, and who returned to the Hospital afterwards without having a trace left.

b. Formation of Abscesses.—Concerning the most dreaded determination of the disordered inflammation in *suppuration and abscesses*, I am able to quiet all apprehensions. From *one thousand patients of my private practice only one had a small abscess on the forearm.* More frequently they occurred in the Charité Hospital, on account of newly-arrived assistant surgeons, &c. Soon, however, they acquire dexterity, and abscesses are rare, hardly ever occurring with ordinary precautions.

As I have said before, each local inflammation may be produced by either the *quality* or *quantity* of the sublimate solution. As small doses of very concentrated solutions, by their more intense chemical action on the tissues, produce, easily enough, local inflammation tending to abscesses, so great quantities of a very weak solution will give rise to mechanical tearing and loosening of the tissues, with the same result. The regions which are especially predisposed for abscess formations, seem to be the same which, with the so-called syphilitic inclination, go over into profuse suppuration. These regions show the same disposition with sublimate injections.

In the beginning of my experiments, viz.: the experimental *stadium* of my practice, I generally took those regions for injections which were situated in the neighborhood of large lymphatic glands, and I then imagined the deposits of the "materia peccans," occasioned frequent deep-seated abscesses.

The *subcutaneous cellular abscesses* take a different course, according to not only either the greater or smaller quantity, or stronger or weaker solution, but also according whether

injected superficially, or more deeply into the cellular tissue. Suppuration generally takes place when the fluids are deposited in the stratum of cuticle, because, absorbing vessels being wanting, the elastic fibres undergo a protracted stretching, and finally tear.

With injections of a too concentrated character, or with too great a quantity of weaker solutions in the subcutaneous cellular tissue, especially in the regions of large glands, the swelling (exsudat—Ger. Nosol.) commences immediately; but only after some time does it soften into an abscess. I have not yet discovered a dangerous termination of an abscess, nor erysipelatous, or lymphangoid inflammation.

c. Injury to Vessels.—Bleedings from pierced veins were not very seldom with injections, but never was it of such magnitude (depending on the locality of the injured vein) as to have caused trouble. Bleeding cannot be avoided, even if places of varicose veins, *nævi telangiectasia*, &c., are not touched. Digital compression is quite sufficient, and never did I have to resort to ligation or Liquor Ferri, Sesqui Chloridi, Argentum Nitricum, &c. But as cases occur where, a little *after the administration*, venous hemorrhage begins, and the patient may be surprised after the physician is gone, it is best to avoid it by compression of the opening for a few minutes, as it will prevent after bleeding. You may instruct the patient himself to compress it after you have left. If, however, a little bleeding occurs, it is rather beneficial than injurious; and so it is well to briefly delay compression, since it may prevent stagnation of blood, which is apt to be painful.

There are some published cases where, by the opening of a vein with a hypodermic morphine injection, rapid intoxication commenced, as if the medicated fluid passed directly into

the circulation of the blood. Nussbaum was first to report it, and after him Spencer Wells and Feith (Cologne). In those cases rapid intoxication, immediately after a small loss of venous blood, ensued. I had two similar cases. Both were young, healthy men, of whom the one, right after the injection, sank down with pallor and vertigo. The other complained shortly after of dizziness, soon losing his consciousness for a few moments. Without trying to explain these phenomena, I doubt very much the view taken by several professional gentlemen, that a thrombus was formed.

The rapid narcotism seems to be due to quickened absorption, and perhaps to the regions where injected. In the cases mentioned by me, I neither increased the usual dose nor administered in any other place than the regions designated above. The mentioned cases had no resemblance to the common ones of mercury poisoning. One of my patients, in whom toxic appearances were manifest, told me afterwards that he "could not see blood," and it may be possible to attribute it to that. Further, as the related cases did not end badly, they cannot, therefore, be paraded to the discredit of the *method.*

It has been said that by drawing back the piston, the injected fluid might be pumped out, but I fail to understand it, and I cannot sustain Nussbaum's view, "to inject very slow, so as to avoid these occurrences."

d. Interruption of Sensibility.—Through the piercing of the needle into the skin, together with the action of the always somewhat acrid solution, *pain* will be brought about. The *mechanical momentum*, produced by piercing, does not differ from the pain induced by any other subcutaneous medication; and, as I said previously, the pain can be con-

siderably lessened by the dexterity of the operator, and the good condition of needle and syringe.

Some patients are highly sensitive—as I have had occasion to observe, on the person of a healthy, robust military officer, who swooned away with every piercing of the needle. To counteract this, it might avail to use a liniment of chloroform or ether, according to the suggestion of my esteemed colleague, Dr. Bergson.

The sensitive symptoms, produced by the *injected sublimate solution*, are of greater importance, especially through the *corroding influence* on the nerves of the subcutaneous tissue. They may follow *immediately* after administration, and quickly disappear, or continue, and after an hour or so reach their climax. The sensitiveness of patients varies. Some hardly feel the pain; some describe it as very violent, and even cases have occurred where patients were refractory. The wound remains for quite a time sensitive to the touch, and so highly disagreeable to the patient is it, that he cannot lie down on his side, as usual; thus being disturbed in his rest. It is best not to make piercings on the side upon which the patient is accustomed to lie, and not too near bed-time. But if, with all these precautions, the patient passes a sleepless night, morphine is not contra-indicated. In the course of the treatment, patients get used to the described pains. A circumstance not ordinarily desirable, the formation of a hard infiltration, as a consequence of the injection, seems to blunt the nervous sensibility. Persons who feel no pain when the skin is pierced, nor any discomfort from the injected fluid, require for a permanent cure a greater amount of injection. There are exceptional cases, where the sensitiveness increases the longer the treatment continues.

To find an infallible remedy for this hyperæsthesia would be an advantage for the method and overcome this objection. In general, a combination of morphia with the sublimate has acted well in my hands. In some cases a cold compress was sufficiently soothing; in others, chloroform liniment had the desired effect. And, as previously mentioned, it is best, in these sensitive cases, to begin with the weaker solutions, gradually rising to the stronger. If the hyperæsthesia becomes excessive, it is advisable to suspend for a few days.

II. GENERAL SYMPTOMS.

In thus using mercury hypodermically, the question arises, to what extent, and in what way, will the known symptoms of *hydrargyrosis* exist?

Without going into the discussion of the preliminary questions, whether the dreaded symptoms have their origin in this metal, or are a combination of syphilis with mercurialism, or whether they are nothing more than derivations of syphilis, and wrongly imputed to mercury, I must openly confess that I hold the latter view, and will only point to the fact that, after the hypodermic use of the sublimate in patients with *lues*, I have had occasion to observe but few of the so-called symptoms. The injury from the mercury was but slight, and can be prevented for the most part. If we consider more minutely the effect of subcutaneously injected sublimate on the different organs, we see:

a. Disturbances of Digestion.—Concerning the *digestive organs*, upon which mercury by the mouth acts so deleteriously, I have to say, I could not detect anything injurious resulting from the subcutaneous method. The smallness of the dose was the self-evident reason. Whenever disturb-

ances of the digestive apparatus arose, which was quite seldom, the effect of the medicine was generally not the cause, but other affections, as *catarrh* of the mucous membrane of the stomach and intestines—an affection standing in close connection to indigestion. Neither did I perceive deleterious effects on other organs, as the *liver*, *pancreas*, *spleen*—a fact in decided contradiction with Graves, Dieterich, Rokitansky and Lorinser, who especially record disturbances of manifold character in these organs, after use of mercury by the mouth.

In many cases where the undesirable complication of *icterus* was present (which we shall dwell on more fully hereafter), we have seen *it*, together with the syphilitic affection, disappear with the subcutaneous injections. I never have seen a symptom in any case which could be traced to *mercurial hepatitis*, *adenophyma* or *adiposis hepatica*. Concerning the effect of sublimate on the *mucous membrane* of the mouth, it seems as if mercury in any aggregated state induces *ptyalism*. Only recently, Kirchgaesser, in Virchow's "Archivé," tried to point out that *mercurial vapors* also are in close connection with producing ptyalism. That mercury, given in powders and assimilated by the stomach in the solid aggregate state, induces salivation, is well known. And even the *sublimate*, *subcutaneously injected*, gives rise to the same process, and often very quickly. I have often observed that after a few hours only, symptoms of salivation would show themselves.

Generally, we may classify the affections of the mouth, resulting from sublimate injections, in three categories:

1. The first form consists of a *slightly inflamed condition of the mouth*, generally resembling simple stomatitis, ushered in by gentle swelling of the submaxillary glands, sensitive

to the touch and somewhat painful. The mercurial stomatitis is characterized by a hyperæmia of the mucous membrane of the mouth, the gums and the *mucosa* of the cheeks. Later, swelling, hyperæsthesia and tenderness of the organs of mastication, supervene, together with an increased discharge of the secretion of the *parotis* and submaxillary glands, probably in consequence of the inflammatory excitement of the chorda tympani and sympathicus. Another cause of the above condition may be the chemical alteration of the saliva in the mouth, which induces an excited irritation of the mucous membrane of the tongue, fauces and œsophagus.

2. The *stomatitis ulcerosa diptheriticais*, named by me as the second form, properly deriving its name from the gangrenous tendency of the ulceration of the mucous membrane of the mouth, which is covered with a dirty yellow, resembling a diphtheritic membrane. This is markedly the case around the last tooth, and the fold produced at the angle of the jaw by mastication; also on the borders of the tongue and cheek pressed by the teeth.

3. The *ptyalism proper* may be characterized as an increase in the flow of saliva in the *absence of even any inflammatory appearance*, without being changed any, or but little, in quality.

In the experimental phase of my subcutaneous method, I hailed these increased affections of the mouth as signs of established absorption of the sublimate, and I did not interfere on account of studying the hyper-secretory effect upon the *lues* and its *recidives*.

It is only attributable to that cause that, with the *four hundred* patients subcutaneously treated, and who have been the material for my first publication, the *high figures*

of 35 per cent. were possessed of mercurial mouth affections. But soon I was convinced that this stomatitis, instead of having a healthy effect, was hurtful, emaciated the patient, took his strength and made it difficult to replace this waste; also, as Sigmund says correctly, that "even the lungs may become injured by the cadaverous odor of the mouth."

As salivation, on the one hand, promotes absorption of the syphilitic *hyperplasia*, so, on the other hand, the sequela due to the disease showed clearly that often no radical cure was effected. And very often the treatment had to be interrupted for days and even weeks. Among the one hundred and forty-four named cases of mercurial stomatitis, which were noticed in two hundred and fifty-six women, in seventy-nine cases the injections had to be suspended on account of the mouth affection. This interruption consisted of five hundred and eighty-eight days, or an average of seven days per person. It is well known that, aside from the disturbance of the nutritive functions, salivation, when once inaugurated, may advance to such a degree that permanent injury may occur to the teeth, bones, soft parts, &c.; therefore, I need not point out the dangers occurring from such a state of things; and for this reason, the chief aim of the physician should be, in every mercurial cure, as also with the subcutaneous method, not only to quickly check salivation, but to anticipate and prevent it.

The first aim is to use curative means, and then prophylactic. Prophylaxis concerns such persons as are predisposed to salivation; also such patients as cannot withstand remedies unsuited to their organisms; *e. g.*, delicate, anæmic, leucæmic and lymphatic constitutions.

This is why women are more apt to have stomatitis than

men. The frail, delicate, and those laboring under existing dyscrasia, and persons who have either lived in unhealthy surroundings, or, on the other hand, have lived too high, are the ones affected.

To order good diet and to have proper food adapted to our cure, to ventilate well the different rooms, is as much a factor in preventive therapeutics as the regularity of all the functions of the body by the suitable use of saline laxatives —such as magnesia, the various salts, sulphur baths, &c.

The *care of the teeth* demands increased diligence, and Sigmund has given us exact rules thereon:

Repeated cleansing of the mouth, and especially of the teeth and gums, should be observed; gargling with a solution of alum ℥i *ad* ℥xvj of distilled water. If bleeding should be lightly induced, apply tincture of rhatany as a lotion; and if painful, use tincture of opium in the same manner. Extract decayed teeth, if any; and restrain the patient from wearing false teeth, if possessed of them.

John Hunter, long ago, pointed out how a necrosed root in the alveola process produced salivation.

In hospital practice, it is not easy to fix these rules and have them fully obeyed; but in private practice I was seldom called upon to adhere to them rigorously, salivation being so very much less frequent.

The warm weather of summer, and being much in the open air, seems a preventive of ptyalism, while the winter weather predisposes the patient to it. Those patients particularly, according to my observations, who have a diathesis predisposed to mercurial *stomatitis*, will need to be regulated in accordance with these rules.

The best remedy to prevent or combat salivation has been, in my experience, chlorate of potash, as recom-

mended by Herpin, Blache and others. The other remedies, recommended by different authors, such as camphor, some of the preparations of sulphur, sulphuric acid (used by Lagneau as a lemonade-like drink), and iodide of potassium, often had either no effect at all, or but little.

As soon as approaching signs of salivation appear, I let my patient gargle with solution of chlorate of potash, gr. x. to the fluid ounce of water. Internally, according to intensity of symptoms, I use a solution of double strength, a tablespoonful to be taken every one or two hours. If there should be much inflammation, I use a solution of gum-arabic and opium. Avoid a too concentrated solution of alum or tannin, because both astringents are, according to Magitot's experiment (*Gaz. Med.*, No. 32, 1866), injurious to the teeth; the first, by destroying the enamel; the latter, by affecting the dentine. Only in ptyalism proper is tannin to be preferred as an astringent.

But if other inflammatory symptoms have set in, especially on the mucous membrane of the mouth, the use of nitrate of silver is indicated, at the same time diminishing the doses of the sublimate injection, or even suspending the treatment for one or more days, until the symptoms abate.

I noticed mouth affections to occur more quickly in those patients whom I treated with my "*Combination Cure*," which I shall hereafter bring to your notice. These patients either *had undergone a mercurial cure before coming to me, or, with the subcutaneous injection, a so-called "Sarsaparilla Sweat Cure" had been instituted. Especially soon did the mouth affections appear in such as took internally the iodide of potassium conjointly with my treatment.* Whether salivation was hereby produced by quicksilver being eliminated in the form of iodide of mercury, soluble in the alkaline

serum of the blood, or whether the known effect of iodide of potassium on the secretory glands of the mucous membrane of the nose and eyes was brought about, forming here coryza and blennorrhagia of the conjunctivæ, working in the same manner on the glandular apparatus of the mouth—I cannot decide, but leave it to further chemical and physiological experiments.

Persons exercising much in the open air are not so susceptible to the affections following slight colds, such as slight inflammation of *the lymphatic glands, and glands of the pharynx and submaxillary region.*

Patients complain of pain in their throat, especially when swallowing, and inspection reveals redness and swelling of the tonsils and enlargement of the submaxillary lymphatic glands, which are pained by pressure, as is seen in common diphtheria. The symptoms, however, never got so aggravated that interruption of the cure was necessary. Gargles of emollient decoctions with opium, or slight pencilings with nitrate of silver were sufficient.

In *hypertrophy of the tonsils*, an occurrence often met after a successful subcutaneous cure, I only use local means, and mostly nitrate of silver. When there is a tendency to inflammation and ulceration of the mucous membrane and alveoli, I use the same. In case the interstitial tissue is tense and hyperplastic, causing hypertrophy of the tonsil, I use the crystals of chromic acid, and apply them on the surface, letting them melt there. This will cause a yellow-brown soft mass, which can be removed after a time, or when we wish to make a future application. If in this manner part of the tonsils are destroyed, the remaining tissue shrinks and causes an immunity against future inflammatory hyperæmia.

This same treatment I have instituted with persons having a slight cold with tonsillitis catarrhalis, with a success most gratifying.

b. Disturbances of Respiration and Circulation.—Concerning the influence of the sublimate on the organs of respiration and circulation—how much the same may give rise to inflammation, or figure in producing anginose symptoms, and to what extent it may increase, or induce tuberculosis—are questions we may put aside, if our assurance is sufficient that, in individuals with disease of the respiratory apparatus, or even with tuberculosis, we prefer our cure to any other, as we shall more fully point out.

c. Disturbances of the Urinary Organs.—The English physician Pavy stated, as a fact well known, that mercury had a strongly deleterious effect on the kidneys. But I can say, from my own experience, that I never noticed that effect from the sublimate injections. I have not hesitated to go so far in some cases, complicated with albuminuria and mellituria, as to inject this solution with good results. I will remark here that, notwithstanding mercury was to be found in the urine, I never could detect in mercurial urine, albumen, as Kletzinsky asserts; neither could I detect sugar, even in cases where the sublimate had been used for a long time, expecting it, as I did, according to the experiments of Laikowsky.

I may further add, that I never saw arise an affection of the *bladder*, or *urethra*, and we may positively say that the whole *uropoëtic system* remains undisturbed by the use of sublimate injections.

d. Disturbances in the Functions of the Skin and Hair.—Of the injurious effects of the sublimate on these just mentioned parts, which effects play quite a *rolé* in *hydrargyrosis*,

we had not a single case to record. My patients remained free from the *mercurial eczema* which always attends the "rubbing cure," as a troublesome companion; and, also, *erythema furunculus* was never witnessed, complications which sometimes arise from the internal use of *hydrargyrum*. On the contrary, our injection healed relatively quickly deep-seated syphilitic ulcerations of the skin, without causing any erosions whatever. Neither had a single patient of mine that idiosyncracy, according to some writers, which gives rise to a peculiar dermatitis, and is a contra-indication for every use of mercury.

Concerning the affection termed "*mercurial alopecia*" (the falling out of the hair), a number of patients complained of it at the beginning of the treatment; but these symptoms, wrongly attributed to the mercury, disappeared as the cure advanced.

In very many of my patients I noticed an increased activity of the perspiratory glands of the skin, especially at night; but whether there were other reasons for it than the subcutaneous injections of the corrosive sublimate, could not be ascertained.

e. Disturbances in the Osseous System.—Diseases of the bones have always received a large share of attention from writers on the effects of mercury. Their preconceived ideas were based on wrong quotations and uncertain observations. I myself had an ample opportunity to observe and treat diseases of the bones; but in no single instance could I pronounce them to be the result of mercury; and I never saw symptoms arise as observed by Dieterich, and called by him "symphoresis periostei mercurialis" — congestion of the periosteum from mercury.

f. Disturbances in the Formation of Blood.—Neither

chemical nor microscopical examinations of the *blood* of mercurialized patients, revealed, for certain, a deficiency in the *red corpuscles*, nor in the albumen. It is, nevertheless, true that mercury deeply affects nutrition, depresses it and produces a kind of cachexia, a form of which is *chlorosis* and *anæmia*. According to these observations but few of my patients complained of loss of strength, nor did I have but few affected with *chlorosis*. Those affected with complaints of that kind were patients where large doses for a longer or shorter time had been used. I generally paused with the hypodermic injections until those symptoms disappeared, when I resumed treatment again. I never noticed that, after a longer or shorter duration of the treatment, symptoms appeared which could be connected with diseased blood. Mostly my treatment ended without any of those disturbances. Neither had I any occasion to notice other alterations of the blood, more closely or remotely connected with mercurial dissolution of the blood, symptomized by *epistaxis*, *hemorrhage of the rectum or uterus*, *disturbances of the latter organ*, *resulting in amenorrhœa*, *dysmenorrhœa*, *&c.* The hot summer months and the overcrowded rooms in the hospitals would surely have been predisposing causes to such hemorrhages. I failed to observe any change in the catamenia, the female patients being undisturbed in this respect, although I used the injection *during menstruation*.

One observation I will not pass over in silence, because it might be classed under the head of blood affections. With some patients, I observed, from six to twelve hours after injection, *ecchymosed patches*, *surrounded by a pale red circle*, on different parts of the body, and of the size of a pin's head up to an inch in diameter. As suddenly as they

appeared they disappeared again, sometimes getting paler, and followed by a desquamation of the epidermis.

They but slightly inconvenienced the patient by itching, and when they appeared after every symptom of syphilis was gone, they frightened the patient, taking the eruption for a relapse of the disease. These patches disappear without any local treatment, and I am not disposed to take them for *purpura*, produced by mercurial dissolution of the blood. I have learned to regard them as partial symptoms of advanced syphilis, an opinion proved correct by the result of the injection cure.

This observation may be a corroboration of the assertion, doubted by few authors, that *syphilis proper*, not modified by medical interference, can bring about, through metabolic changes of the blood's albumen, a lessening of the blood corpuscles, developing the appearances of *chlorosis* and *anæmia*, and such symptoms as were above described as belonging to mercurialized persons. With persons of that kind, who, with disturbances of some organs, had a cachectic appearance, the sublimate worked in a wonderful and surprisingly radical way, changing them so that after the treatment was ended they seemed hardly the same persons.

g. Disturbances of the Nervous System.—A glance into the literature on this particular branch (and I will name here only the valuable works of the learned scientist, Kussmaul), shows how diffused the picture is of what is commonly called *mercurial neurosis* and *psychosis*, and how contradictory the symptoms are. It is not yet demonstrated whether mercury itself causes these disturbances, whether they result from impaired nutrition and deteriorated blood, or whether these diseases are sequences from heterogeneous causes.

My patients generally showed no symptoms that could be attributed to mercury causing alteration of the functions of either the sensitive or motor nerves. *We had neither anæsthesia, nor hyperæsthesia, nor spasm, nor convulsion to combat. None of our patients showed signs of spinal or cerebral paralysis. We cannot report a dizziness in the form of vertigo mercurialis, nor swooning. We cannot chronicle a case of psellismus, nor of aphonia. We have not witnessed either epileptiform or apoplectic attacks.* Only in four cases did I observe anything simulating a nervous disturbance. In three we designated a *mercurial tremor;* in the fourth, what is termed *mercurial erethism.* The first three were individuals of a healthy, robust constitution. We observed a tremor of a slight character in the outstretched hands, after fifteen to twenty-five injections of $\frac{1}{8}$ gr. each.

The case of erethism occurred in a patient who received large quantities of the sublimate subcutaneously, and who underwent, without our knowing it, a "hunger cure,"* which case I shall relate more fully hereafter.

We used our treatment even in *drunkards* without any untoward changes or any augmentation of their tremors, which we shall point out in the course of this work.

The *psychical effect* of mercury we noticed, in some of our female patients, by a greater sensitiveness and nervousness. Whether this was occasioned by the specific effect of the drug, or whether it was induced by the pain occurring from the daily repetitions of the injection, we cannot say. The male patients showed these symptoms in a less degree, and

* The "hunger cure" has been used in some hospitals in Germany for the last ten or twelve years, as an anti-syphilitic treatment, suggested by French authorities, and very much practiced in France.—Translator's Rem.

therefore we are inclined to think the individuality of our female patients had much to do with this psychical erethism. So have I noticed, among the educated part of my patients, that very many showed quite a marked change in their minds for the better; and this change was the more remarkable since quite a good many patients are very despondent, almost hypochondriac, with a venereal disease. This despondency every syphilographer has occasion to notice—a condition equally bad for the patient and discouraging for the physician. Whether it was due to the quicker perception of better feeling, or whether mercury has a specific effect on the nerves, we are, according to the present state of our science, unable to tell.

SYMPTOMS OF INTOXICATION.

When I come to the conclusion that toxic appearances are not significant, and are infrequent, I must remind the reader that, to avoid them, he must cautiously administer the medicine, in accurate doses, as pointed out by me. *If, on the other hand, the maximum doses are overstepped*, then *acute sublimate intoxication*, as I call it, occurs, according to the individuality and quantity of injected sublimate. I shall try to characterize the *intoxication.*

These symptoms, arising in such cases through intoxication, may be classed as clear absorption of the *sublimate*, and interesting, therefore, because their character does not present any complication. This differs from the internal administration of mercury on the mucous tissue of the stomach, or either when the atmosphere of the room is impregnated with mercury, and it enters into the system by inhalation, or when it enters by means of the rubbing cure.

The totality of the symptoms in our intoxication gives the impression of malignant *gastro-enteritis*, while, in point of fact, the entire intestinal tract is unaffected by the direct effects of the drug. In lighter cases, the intoxication is ushered in by gastric disturbances like anorexia, coated tongue, bad taste, sometimes metallic; yet but seldom does the patient complain of nausea and vomiting. After a little time, pain of a sharp, burning character is experienced—symptoms which manifest themselves not only spontaneously, but by pressure on the abdomen especially, and in the regions of the stomach and right hypochondrium. A little later, diarrhœa commences, tinged with blood only when occurring profusely. If this symptom occurred during the day, the sleep was disturbed—often interrupted by sudden waking up. These patients presented a marked pale appearance. The conjunctiva was especially pale, the eye appearing dull and the face wearing a look of suffering. They complained of great languor, and after walking but a short distance, they were obliged to sit down and rest. On this account many remained in bed.

The secretions showed nothing abnormal. With some, the quantity of urine was increased, lessened in specific gravity, of pale straw color, without any abnormal ingredients.

Pulse, narrow and flexed, having from 90 to 100 beats per minute, which rose to 130 by slight exertion. After injections of relatively greater doses, the symptoms were aggravated, patients generally complaining of a *vertiginous feeling*, and after walking a few steps they would feel obliged to seize hold of something for support. Even in bed these symptoms were noticed, with comatose complications. Pulse, immediately after injecting the sublimate, was

accelerated and wiry, but would fall down to 60, and in one case to 40 beats per minute.

The skin was in every observed case without any turgor; cool to the touch, and often covered with a clammy, cold sweat. Stronger symptoms, denoting acute gastritis, occurred later. With the already painful affection of the abdomen, vomiting occurred, sometimes with *bloody dysenteric stools* and tenesmus. Urine was voided in small quantity; but nothing abnormal could be detected. I never noticed a fatal termination of such cases, nor any lasting injury. Restoration came about under appropriate diet and treatment—the disturbances of the digestive apparatus improving also. The therapeutical treatment consisted of suitable tonics and nutritious diet. For the dysentery we used opium; for the vertigo, excitants, with good and marked results.

IV. DIETETIC RULES.

I. CONCERNING THE BODY.

As remarked previously, our cure has the advantage over all others, that it *does not confine the patient to bed or room.* On the contrary, I allow all my patients to *exercise in the open air*, when the weather is not too inclement, only cautioning them against the morning and night air, and directing them to wear woollen wrappers and drawers.

Only in a few cases did I notice catarrhal affections in the pharynx and larynx, and in but two cases, a heavy bronchitis, both being patients who, contrary to my orders, took a long walk upon an icy, cold winter day. On the whole, it seems that by staying in a uniform temperature during the entire treatment, cases like these are benefited—

a fact I had occasion to notice in the Charité Hospital and among my private patients.

The same freedom prevails in the dietetic *regime.* I never insist that my patients shall fast, as is the case with many anti-syphilitic treatments; yet it is certainly best to have some regulation about the diet; still I never employ with my cases a routine practice, laying down certain rules. On the contrary, individuality and diathesis are my guide, and I pay a good deal of care to such persons as have a chlorotic or other complication with this venereal affection.

I classify them in general into three distinct groups:

1. Robust.
2. Medium strong.
3. Weak.

As a general rule, I do not allow any food that is difficult for digestion, nor do I allow a diet which will produce flatulence, hard stools and constipation; so it is best to prohibit sour, salty and spiced victuals. I observed, in the course of time, that it required, in robust, healthy and well-nourished individuals, more of the sublimate to produce a favorable result. I also noticed that a complete cure was not established until these patients began to lose flesh. For this reason I adopted, in later cases, a little more restriction in diet; and when I saw that completion of cure was not taking place, I employed oftentimes mild, and in some instances even drastic purgatives, and always with good success. With persons of the second class I institute a general diet, corresponding to such as they are used to at home, with perhaps only half the quantity of meat for dinner, and then I prefer the white meats to the other. For that shortening of diet, on account of less meat, vegetables and soups may be allowed.

The first and second class of patients I permit to use coffee, tea, cocoa, &c., for breakfast; but the use of *fermented liquor* is strictly prohibited, and only in very exceptional cases do I make use of it. I insist strongly that none shall be used, even among the better class of society, when the patient has been habituated to it for years, and I never saw any untoward result arising from the abstinence, as the future history of my cases will show. In very exceptional cases I allowed light Rhine wine.

I come now to the *third class* of my patients, typified by a decidedly bad nourishment. I class among them here old persons, debilitated by sickness, &c. They have to be especially cared for as to diet, because it seems that the injection of the sublimate, in such subjects, destroys a part of the albumen of the blood, and on account of that loss a further debility is induced. I allow such subjects beef, venison, eggs in sufficient quantity, besides a glass of good beer and good old wine. I not only allow it, but strongly recommend it.

As with other anti-syphilitic treatments, the skin, urinary organs and intestines have to be watched, but not as closely as in other methods, since our treatment does not induce so much secretion there.

I use, in the incipiency of the treatment, the bath for the patient, in order to induce a free action of *the skin*, and follow it up from time to time. Should there be any suspicion of scrofulous affection, or any other disease of the skin, suitable ingredients for the bath should be employed, as ley, &c.

Concerning the *urinary organs*, it is very important and beneficial to have their function in a proper condition, and

slightly diuretic drinks, as the carbonated waters, &c., are indicated.

The chylopoëtic viscera, especially the stomach and intestines, ought to be watched, and particularly in such persons as labor under habitual obstruction, attention to regular motion of the bowels is indicated. Remedies like *confectio sennæ*, or a compound *infusion of senna*, are proper remedies to be used, care being taken that no dysenteric or diarrhœal condition is brought about. This would weaken the patient without accomplishing any benefit. In only such persons as are fleshy and well nourished, as I said before, should drastic purgatives be employed.

Many syphilitic patients have a predilection for purging, thinking it will assist the treatment. Such persons should be instructed differently.

II. PSYCHICAL CONSIDERATIONS.

It is of the utmost importance to be quiet, comfortable and unirritated, because mercurial erethism may result from not following the rules laid down by the physician.

It is with many sensitive persons a thing of no small importance that they experience pain with each injection—giving rise to erethism. It is doubly necessary that such persons avoid all excesses and mental excitement. But should such an unfavorable condition be unavoidable, on account of family, business affairs, &c., it is best not to commence the treatment at all.

Here I must point out, once again, a favorable sign for our treatment, which has much to do with the final result. Patients in a very depressed state of mind generally, after the first injection, would give way to a *better feeling*, because they comprehend, on the one side, a rapid result, and

on the other side, see that it is not necessary to be restricted to bed and room, nor to adhere to a rigid diet. All these things have a salutary influence on the patient, and are clearly in favor of our method.

V. INDICATIONS FOR INJECTION.

Before I shall enumerate more thoroughly the indications for our treatment, I think it necessary to state, in order to avoid misunderstandings, that I see in every syphilitic case a *dualism.*

Therefore, the *so-called chancre*, the *ulcus molle*, which, as a primary affection, is only to be treated locally, and not constitutionally, must be separated *most entirely from the genuine syphilitic sclerosis.*

The virus of a primary chancre is, according to its localized condition and nature, never able to spread any further than the region of the nearest lymphatic glands; while the poison of secondary syphilis, on the contrary, has the peculiarity to enter the system more quickly, infecting the whole organism and producing injurious indurations, long before it could have succeeded by absorption in entering those parts of the body where, after a relatively protracted incubation, every trace of the infection is swept away in a hidden manner.

I do not think it necessary, but irrelevant, to repeat all that has been said for the dualistic conception of the nature of lues.

Only, then, when all the symptoms have been taken into consideration, local affections, as such, will be differently judged, and practice and science will gain, diagnosis and therapeutics having a better result.

I. INITIAL SYPHILIS.

The first question that arises is, *Is primary syphilitic induration, not accompanied with other syphilitic affection, except swelled inguinal glands, a disease for sublimate injections?*

The question is not very easy to answer with precision. Our most experienced authors are not yet certain whether the initial sclerosis ought to be treated on a general anti-syphilitic plan. Professor Sigmund, of Vienna, writes as follows: "Lighter forms of syphilis, especially in not very healthy subjects—as *simple induration* with small papulous, superficial, broken-down tissue, and infiltration of the neighboring lymphatic glands, with progressing indolent swelling of more distant glands, and erythema of the mucous parts of the mouth, without giving rise to other symptoms in other organs—need only a local treatment, and are *often cured spontaneously.* But to come to a definite conclusion requires *long time for observation.* I take *from three to four months* as an average time for observation, since experience has taught me that within this time, if the infection has not been previously eradicated, it assumes a new phase."

To my mind the whole thing, as above, is uncertain and unsatisfactory, and seems to be derived from a very superficial observation. Such assertions can only be proved by authenticated statistical facts. And it seems to me it demands a greater material for observation to make it valuable for statisticians. And the material of casual statistics, by which the spontaneous disappearance of syphilitic *sclerosis* could be accurately ascertained, is entirely wanting in our syphilographic literature. It is for this reason our patients pay no attention to the incipient nodule. Not only non-

professional men fall into that error, but even medical men and students, none of whom have paid scarcely any attention to the primitive appearances of the papules, either not seeing them, or if they did, they regarded them as irrelevant, and employed no prophylactic treatment.

Patients only seek for help when the neglected *sclerosis* results in ulceration and other threatening symptoms.

It is here that the second stage of incubation is partly or wholly commenced, and the blood is already venereally affected, as shown by the fauces and exanthematous eruption on the skin. Directly real statistical proof and facts I cannot give for my views, which cannot be expected, on account of the course the *initial affections* take; but I have *data* which will strongly support my opinion.

For the last eighteen months, in which I devoted my attention to the point in question, I made observations on *eight hundred* patients in the Charité Hospital, who suffered with genital ulcerations. Of that number *five hundred and seventy* showed the soft chancre, with its consequences and combinations—the rest having syphilitic general diseases, with or without *sclerosis* on the genitals.

Initial syphilitic effects were only present in *nine* persons, and with *six* the *sclerotic* process showed already a tendency of commencing destruction. In *two* cases the diagnosis of *ulcus durum* (hard chancre) could be made out with a probable, but not with an absolute certainty.

This great rarity of initial sclerosis, in its isolated appearance, its coincidence and its combination with the more progressed general syphilitic symptoms, such as glandular swellings, exanthematous affections of the mouth, &c., seems to be the positive proof that a spontaneous healing, without

a sufficient general therapeutical treatment, occurs but very seldom.

Zeissl confirms these views of mine somewhat, in saying: "If the commencement of syphilitic affections is not altered by therapeutical means, the whole run of the changes of syphilis, with more or less interruption, is gradually developed. By great care of the patients, the symptoms may disappear spontaneously; and if the symptoms of disappearance may be taken for a cure, it is certainly right to assert that syphilis may heal itself; *but I never yet saw a case where, with spontaneous healing of the earliest constitutional symptoms of the disease, the disease itself was eradicated, and where it did not lead to disturbances of other vital organs.*"

As I am of the same opinion, I think it not only justifiable, but even highly advisable, to use the sublimate injection where the initial symptoms of *sclerosis* appear. And further, the perfect cure of the disease, whose continuance is dangerous, on account of a very probable and possible relapse, is, and ought to be, the main therapeutical point. The curability of the indurations is not in proportion to their continuance. I will give one example in illustration.

In a workman thirty-six years of age I found an induration of three years' standing. He had used the mercury treatment of Dzondi and Zittmann, and still the induration remained of considerable size.*

* The decoction of Zittmann (Decoctum Zittmanni) is a preparation of sarsaparilla, much used in Germany for purposes similar to the use of our "Compound Decoction of Sarsaparilla," and as it has attracted some attention in this country, as a remedy in obstinate ulcerative affections, we give the formula of the Prussian Pharmacopœia, which is generally followed in its preparation.

Take of sarsaparilla 12 oz., spring water 90 lbs.; digest twenty-four

The nature of this *sclerosis* showed itself after three months in the further development of syphilis in the form of broad papules around the scrotum and anus, together with a syphilitic eruption on the body, swelling of the *tubera frontalia*, which tormented him nightly in attacks of *dolores osteocopei* ("bone ache"). On that account I think a mild and moderate treatment by injections, in cases of surely syphilitic indurations, very proper.

To wait *three* or *four months*, looking for further developments of syphilis, as Sigmund advises, under the supervision of a physician for that length of time,—it seems but few patients would submit to it.

II. CONDYLOMATA LATA.

Of a greater and a more valuable importance in practice is the second question, viz.: Are broad condylomata—well known as the first syphilitic symptom in woman—as much an indication for *injections of sublimate* as are syphilitic indurations of tissue? I consider this question of more importance than the first one, because it is met in private, and

hours; then introduce in a closed bag 1½ oz. of sugar of alum (saccharum alumnis—seu saccharum aluminatum), consisting of equal parts of pulverized alum and the whitest sugar, ½ oz. of calomel and 1 dr. cinnabar. Boil down to 30 lbs., and near the end of the boiling add of anise seed and fennel seed each ½ oz., senna 3 oz., licorice root 1½ oz. Put aside the liquid under the name of "strong decoction." To the residue add of sarsaparilla 6 oz. and 90 lbs spring water. Boil down to 30 lbs., and near the end of boiling add lemonpeel, cinnamon, cardomon seed and licorice root *each* 3 dr. Strain and set aside the liquid under the name of "weak decoction." Mercury was detected in this decoction by Wiggins in very small proportions. It should not be prepared in metallic vessels, lest the mercurial solution should be decomposed. The decoction may be freely taken.—TRANSLATOR'S REM.

in hospital practice very much more frequently. Very often we find female patients suffering from broad condylomata, but seldom do they themselves apply voluntarily for treatment, since they think the affection devoid of danger.

Here in Berlin, where prostitutes are compelled by law to undergo a weekly examination, all having *condylomata lata*, without any other affection, are sent right off to the syphilitic wards of the Charité Hospital.

Before entering upon the treatment of this affection, I wish to state my views in regard to its nature. I believe *condylomata lata* to be an undoubted partial appearance of constitutional syphilis in woman, without classing them, either histologically or chronologically, under the same head with sclorosis in men.

In a former work of mine on the treatment of syphilis with hypodermic injections of sublimate (Annals of the Charité Hospital, 1868, vol. xiv.), I endeavored to bring forth my views, mostly accepted now, on the constitutional syphilitic nature of those symptoms in woman, and to defend them against a few skeptics like Thiry and Soresina. I endeavored to show there especially the coincidence of broad condylomes with other grave diseases of constitutional syphilis, and have given statistical references, and explained that these seemingly local affections were only partial symptoms of general syphilis, and must not be confounded with slender warts or vegetations. The latter are always a consequence of local irritation; while, on the other hand, the broad variety develops itself differently. To support that supposition for the here so-called secretory beginning of the acuminata, *versus* the condylomata lata, (*i. e.*, the moist, *versus* the dry variety), more observations here follow.

In women in the latter part of pregnancy, and in many

who were recently confined, broad warts* are developed, and disappear spontaneously without treatment. The other kind (*i. e.*, slender wart) is developed under the same circumstances, and if already present it spreads more quickly. Metamorphosis in the female organism being at this particular time more rapid, absorption of already existing exudation and broad condylomes were favored, and progressive transformation hastened. On the other hand, the acrid secretion of pregnant females (*fluor vaginalis*) and the *lochia* in childbed seems to assist the pointed condylomes and favor their rapid spreading.

In the section quoted in my previous work, I have strongly urged the point, which gave rise to much misunderstanding to syphilographs, and for which explanation only statistics can be used, viz.: *I mean the proportion in which broad condylomes tend to initial sclerosis.* The misunderstanding arose from this cause: authors like Waller, Lindemann, Rinecker, Bærensprung, Lindwurm, Hebra, &c., who experimented with inoculations of secretions of secondary syphilis, had a rather loose nosology, and named *induration produced by inoculation*, with different names,—and sometimes used the word *papules*, which term heretofore had been regarded only as a synonyme of *condylomata lata.* I find another point corroborating me in this cause—that the affection named by me as sclerosis in woman may arise more frequently than hitherto supposed, and quite a time before the development of broad warts, but indeed so hidden and in such places in the female sexual organs that they are

* Called by Bumstead "Vegetations—papillary growths springing from the skin or mucous membrane, chiefly in the neighborhood of the genital organs, and identical in their nature with the warts found so commonly on the hand."—Translator's Rem.

hard to discover on account of their anatomical position and configuration. On the other hand, condylomes, appearing later, are more easily visible to the eye. On those places which are in juxtaposition to the female sexual organs, during the physiological act of *coitus*, and where direct infection may be transmitted, as, for instance, the *labia minora*, *introitus vaginæ*, *commissura posteriora*, very seldom are detected the *broad condylomes;* but, on the contrary, hidden sclerosis appears. Other places, like *labia majora*, *plicæ femoralis*, *regio perinealis*, places never directly touched during coitus, are the most favorite localities for the *condylomata lata*, and but rarely show *ulcus molle* (the soft chancre), produced by direct contact, as is frequently the case on the *labia minora* and *introitus vaginæ*.

From these observations I gradually came to the conclusion that the broad warts were formed *quite a time subsequent to the original infection.*

The time condylomes first appear is generally from *five to ten weeks after* the formation of an induration. If we take the time for the incubation of the initial sclerosis as three weeks, it is clearly evident that the *broad* condylomes will make their appearance in from eight to thirteen weeks after an unhealthy coitus.

But as the exanthema, especially of the maculous kind, appears in six or seven weeks after infection, we see the *lata*, in many cases, shortly before the outbreak of the exanthema, and with some at the same time.

With most patients affected with condylomes, our aim ought to be not only the treatment of the local affection, but, in addition, to combat general constitutional symptoms, as a product of those excrescences. This is the reason why

I instituted the *injections for broad condylomes*, and think this treatment justifiable in all those cases.

I shall employ this occasion to give the necessary statistical proofs of the seat and appearance of condylomata lata, and use those five hundred cases which I have statistically arranged in my previous work, because the other observed twelve hundred cases, which are the basis of the present work, could not be so arranged on account of lack of time.

A. IN WOMAN.

I. SEAT OF CONDYLOMATA LATA.

Of the 356 women, there were infected with *condylomata lata*, at and around the genitals, 280 persons = 78.65 per cent. If we reckon in here those who had *condylomata lata* either on the lips, mouth or throat, we see that out of 356 women, 305 persons = 85.67 per cent., had condylomata lata.

The special seat of the lata was:

A. In one single region in 96 cases = 31.47 per cent.:
Around the outer genitals in 56 cases = 18 36 per cent.
In the throat in 21 cases = 6.88 per cent.
At the anus in 13 cases = 4.26 per cent.
At the lips in 4 cases = 1.31 per cent.
At the thigh in 2 cases = 0.65 per cent.

B. At the same time in two regions in 97 cases = 31.8 per cent.:
At the genitals and throat in 41 cases = 13.44 per cent.
At the genitals and anus in 35 cases = 11.47 per cent.
At the genitals and inside of thigh in 7 cases = 2.95 per cent.
At anus and throat in 7 cases = 2.29 per cent.
At genitals and lips in 2 cases = 0.65 per cent.
At genitals and tongue in 1 case = 0.33 per cent.

At genitals and between toes in 1 case = 0.33 per cent.
At lips and throat in 1 case = 0.33 per cent.
At nose and lips } no cases.
At nose and throat }

C. At the same time in three regions in 74 cases = 24.26 per cent.:
Genitals, anus and throat in 41 cases = 13.44 per cent.
Genitals, anus and bend of thigh in 13 cases = 4.26 per cent.
Genitals, lips and throat in 6 cases = 1.95 per cent.
Genitals, lips and bend of thigh in 4 cases = 1.34 per cent.
Genitals, throat and nose in 4 cases = 1.34 per cent.
Genitals, anus and lips in 1 case = 0.33 per cent.
Genitals, throat and umbilicus in 1 case = 0.33 per cent.
Genitals, throat and between toes in 1 case = 0.33 per cent.
Genitals, lips and nose in 1 case = 0.33 per cent.
Anus, throat and nose in 1 case = 0.33 per cent.
Anus, tongue and nose in 1 case = 0.33 per cent.
Lips, tongue and throat in 1 case = 0.33 per cent.

D. At the same time in four regions in 27 cases = 8.85 per cent.:
Genitals, anus, throat and bend of thigh in 20 cases = 6.55 per cent.
Genitals, anus, navel and bend of thigh in 4 cases = 1.30 per cent.
Genitals, tongue, lips and throat in 2 cases = 0.65 per cent.
Genitals, anus, lips and throat in 1 case = 0.35 per cent.
Genitals, anus, lips and nose—no case.

E. At same time in five regions in 8 cases = 2.62 per cent.:
Genitals, anus, lips, throat and bend of thigh in 6 cases = 1.95 per cent.
Genitals, anus, navel, throat and bend of thigh in 1 case = 0.33 per cent.
Genitals, anus, navel, throat and nose in 1 case = 0.33 per cent.
Genitals, anus, axilla, throat and chest in 1 case = 0.33 per cent.
Genitals, bend of thigh, lips, throat and nose in 1 case = 0.33 per cent.

F. At same time in six regions in 3 cases = 0.85 per cent.:
Genitals, anus, bend of thigh, navel, lips and throat in 1 case = 0.33 per cent.

Genitals, anus, bend of thigh, tongue, lips and throat in 1 case = 0.33 per cent.

Genitals, between toes, bend of thigh, chest, neck and throat in 1 case = 0.33 per cent.

Respecting the condition of the broad condylomes, they appeared with:

Complete epidermis in 63 cases = 22 per cent.

Eroded epidermis in 167 cases = 59.64 per cent.

Very much ulcerated in 35 cases = 12.5 per cent.

In the remainder, 76 women, who showed no *lata*, the following was the result as to the genitals:

Hard ulcers in 15 cases = 5.35 per cent.

Ulceration of an indefinite character in 4 cases = 1.42 per cent.

Superficial erosion with a certain hardness in 27 cases = 9.64 per cent.

II. COMBINATION OF CONDYLOMATA LATA WITH OTHER SYPHILITIC AFFECTION.

Exanthemata.—Of 280 women infected with condylomes, combinations with exanthemata were in 233 persons = 83.2 per cent.

	CASES.	PER CENTAGE.
Exanthema maculosum in	95	40.77
" maculo-papulosum	38	16.31
" papulosum	25	10.73
" maculo-papulo squamosum	21	9
" papulo squamosum	14	6
" maculo squamosum	12	5.15
" squamosum	6	2.57
" maculo-papulo squamo-pustulosum	6	2.57
" papulo-squamo condylomatosum	3	1.29
" papulo-pustulosum	2	0.86
" crustosum	2	0.86

	CASES.	PER CENTAGE.
Exanthema maculo-squamo crustosum . . .	2	0.86
" maculo-papulo condylomatosum . .	1	0.43
" papulo condylomatosum . .	1	0.43
" maculo-vesiculosum	1	0.43
" papulo-vesiculosum	1	0.43
" squamo-pustulosum	1	0.43
" maculo-papulo squamo condylomato-crusto-sum	1	0.43

B. IN MEN.

I. SEAT OF CONDYLOMATA LATA.

Of 144 men, there were infected with *condylomata lata* on the genitals 58 persons = 40.18 per cent. Taking those who were affected in and around the mouth, we have 79 persons = 54.86 per cent.

The special seats were:

A. In one region in 31 cases = 39.23 per cent.:
In the throat in 13 cases = 16.45 per cent.
At the anus in 11 cases = 13.92 per cent.
On the penis in 2 cases = 2.53 per cent.
On the scrotum in 2 cases = 2.53 per cent.
On the mouth in 2 cases = 2.53 per cent.
In the bend of the thigh in 1 case = 1.26 per cent.

B. In two regions in 26 cases = 32.91 per cent.:
On the scrotum and anus in 6 cases = 7.59 per cent.
On the throat and anus in 6 cases = 7.59 per cent.
On the throat and scrotum in 3 cases = 3.79 per cent.
On the penis and scrotum in 2 cases = 2.53 per cent.
On the mouth and scrotum in 2 cases = 2.53 per cent.
On the mouth and throat in 2 cases = 2.53 per cent.
On the penis and anus in 1 case = 1.26 per cent.
On the penis and throat in 1 case = 1.26 per cent.
On the scrotum and axilla in 1 case = 1.26 per cent.

In the mouth and tongue in 1 case = 1.26 per cent.
In the nose and throat in 1 case = 1.26 per cent.

C. In three regions in 13 cases = 16.45 per cent.:
Anus, mouth and throat in 3 cases = 3.79 per cent.
Anus, scrotum and throat in 2 cases = 2.53 per cent.
Anus, scrotum and penis in 1 case = 1.26 per cent.
Anus, scrotum and bend of the thigh in 1 case = 1.26 per cent.
Anus, scrotum and umbilicus in 1 case = 1.26 per cent.
Anus, penis and throat in 1 case = 1.26 per cent.
Anus, bend of thigh and throat in 1 case = 1.26 per cent.
Anus, bend of thigh and umbilicus in 1 case = 1.26 per cent.
Anus, between the toes and throat in 1 case = 1.26 per cent.
Nose, mouth and throat in 1 case = 1.26 per cent.
Tongue, mouth and throat in 1 case = 1 26 per cent.

D. In four regions in 6 cases = 7.59 per cent.;
Scrotum, anus, bend of the thigh and throat in 2 cases = 2.53 per cent.
Scrotum, anus, mouth and throat in 1 case = 1.26 per cent.
Penis, anus, bend of thigh and throat in 1 case = 1.26 per cent.
Umbilicus, anus, bend of thigh and throat in 1 case = 1.26 per cent.
Mouth, anus, tongue and throat in 1 case = 1.26 per cent.

E. In five regions in 3 cases = 3.79 per cent.:
Penis, scrotum, mouth, throat and anus in 2 cases = 2.53 per cent.
Penis, scrotum, anus, nose and throat in 1 case = 1.26 per cent

II. COMBINATION OF CONDYLOMATA LATA AT THE GENITALS AND SURROUNDINGS, WITH EXANTHEMATA.

Of 58 men affected with *condylomata lata*, in 56 cases (= 96.55 per cent.) it was combined with exanthema as follows:

	CASES.	PERCENTAGE.
Exanthema maculosum in	18	31.03
" papulo-squamosum . . .	8	13.79

	CASES.	PER CENTAGE.
Exanthema maculo-squamosum	5	8.62
" maculo-papulo-squamosum	5	8.62
" maculo-papulosum	4	6.89
" papulosum	3	5.17
" papulo-pustulosum	3	5.17
" squamosum	1	1.72
" crustosum	1	1.72
" luposum	1	1.72
" squamo-condylomatosum	1	1.72
" condylomatosum-ulcerosum	1	1.72
" maculo-papulo-crustosum	1	1.72
" papulo-pustulo-crustosum	1	1.72
" papulo-condylomato-pustulo crustosum	1	1.72
" maculo-condylomato-squamo-crustosum	1	1.72
" papulo-squamo-luposum	1	1.72

Further, there was found to be
Iritis in 2 cases = 3.45 per cent.
Tophi in 1 case = 1.72 per cent.

III. THERAPEUTICS OF SYPHILITIC SCLEROSIS AND CONDYLOMATA LATA.

Respecting the quantity of sublimate for a perfect cure of the already mentioned initial syphilitic affection, I must remark here, that among the patients treated by my new method but very few were affected with syphilitic sclerosis simply. The greatest number had several other syphilitic ailments, so that it was more a *total cure* of general syphilis than a destroyer of the single initial symptoms.

The *indurations* showed, in many cases, a very different degree of resistance to the hypodermic medication.

In most cases the strength of this resistance, and the grade of progress in the treatment, seems to be in proportion to the duration of the already present affection, for the

sooner the injections were used against the sclerosis, the smaller was the dose necessary for a perfect cure. On the other hand, the longer cases had delayed in applying for treatment, the larger was the quantity requisite.

In the majority of cases, from 1½ gr. to 2 gr. of the sublimate were sufficient for the entire cure of sclerosis. But in some cases, which had existed for quite a time, and where large indurations had been formed, greater amounts, and in some instances 4 gr. were hardly sufficient. The intensity and size of the induration simultaneously lessened with the continuance of the medication. Only in exceptional cases did there remain any infiltration behind, which became softer, still differing from the normal surrounding tissue by its hardened consistence.

It was extremely difficult to get rid of these "*cartilaginous-like knots*," which are very obstinate in resisting every mode of treatment and medication, a fact well known to all syphilographers. A very concentrated solution of the sublimate seemed to me the most effective against such indurations. The formation begins to disappear with its use, sometimes even in a rapid and surprising way, so that the extended skin covering the elevated knots fails to collapse, and remains for a while loose, like a small empty pouch, after the induration vanishes.

In all cases where, after using a *middle-strong* solution of sublimate, an unconquerable "stand-still" in the retrogressive metamorphosis seems to be visible, suspension of the treatment for a time may be advisable. We have had occasion to observe that, after the formation was again reproduced, when the treatment was resumed, a thorough and complete cure was the result.

We further observed that *ulcerative complications*, often

occurring with syphilitic sclerosis, are more tractable than other symptoms. After using ½ gr. of sublimate, the ulcers heal, and by the time ¾ gr. to 1 gr. has been used, cicatrization is complete. With the same rapidity *ulcera mollia* (soft ulcers) are healed, it making no difference whether they have their seat on the induration or in its immediate neighborhood, or whether they are in other regions of the body.

The healing of the *broad condylomes* by injection of sublimate is quicker and surer than the cure of the sclerosis, in both men and women, either whether their seat be, as usual, on the genital organs or surroundings, or near the anus, or whether reaching, as a confluent spreading, into the rectum.

If we consider the changes of regressive metamorphosis, which show themselves during the cure by the sublimate injection on condylomatous excrescences, we find that the yellow crust covering them dries up, falls off and the condylomatous bases are soon destroyed by healing. Even the pale red patches remaining, if the injection is continued, change their color to brown yellow, beginning to get paler in the centre. The brown and somewhat darker pigment on the periphery remains longer, but is without any therapeutical significance whatever.

The amounts sufficient in all cases were from ½ gr. to 2 gr. of bichloride mercury for the entire healing of condylomes. The sooner they were treated, so much quicker the cure, and *vice versa*—showing that the ease and quickness of cure depended on the preceding duration of the disease. In the same ratio is the resistance against the sublimate,—as to the consistence and spreading of the condylomatous excrescences. The softer these are, and the smaller the circumference they have, the quicker the therapeutical result; but

larger and harder excrescences, especially when ulcerated on their surface, require a more protracted treatment.

The process of cicatrization has first to be induced and completely ended before real involution can be expected. Even here the process of healing commences as quickly with the subcutaneous use of the sublimate as in the already mentioned cases of ulcerative indurations of male patients. We had occasion to observe also how the fatty, dirty-like secretion began to dry up with from four to six sublimate injections, in doses of $\frac{1}{8}$ gr. each. The condylomatous ulcers begin to form new cuticle; the excrescences become flattened and sink down, and perfect cicatrization results. There is also a difference of time in healing. The most obstinate are the broad excrescences around the anus and genital organs. They are especially unyielding when their form is pointed and they reach into the *orificium ani*, or even as far as the mucous parts of the anus and rectum. Here we find those deep ulcerated rows, produced by defecation and constant tearing. Healing here is naturally very slow.

Œdematous swelling of the *labia majora* is not a very rare result from broad condylomes, especially when the latter are ulcerated and grouped together, giving rise to fluxions, hyperæmia and transudations.

These consecutive swellings of the labia do not require a special treatment. On the contrary, the slender, long, indurated excrescences, having their seat generally on the inside and on the border of the labia majora, require more than ordinary doses of the bichloride solution. We have used here $2\frac{1}{2}$ gr., and sometimes even more for a cure.

And I must remark here, that in some few cases of condylomes—and I have already pointed out this with sclerosis—those excrescences are very unyielding to treatment, and

require rather increased quantities of mercury. Especially was this the case with those mucous papules which, instead of being covered with a thin stratum of epidermis or epitheleum, had a thick wart-like epidermis, so that I used in my lectures the special term "*condylomata verrucosa.*" *

A second species of equal obstinacy, I gave the name "*condylomata mixta,*" using the same analogy existing between them and the so-called *ulcus mixtum.* With the first expression I designate all those papillary excrescences which originally have the formation of broad condylomes, but instead of undergoing a superficial fatty metamorphosis, or an ulceration, they form on the surface papillary excrescences. These are elevated, and easy of being confounded with pointed condylomes, and which, microscopically examined, show the same spreading peculiarity of the papillæ.

I shall pass on to the *local treatment* of the described syphilitic affections, namely, syphilitic indurations and condylomes, because I could not entirely lay aside local treatment with my patients in the Charité, for the purpose of experimenting on the pharmaco-dynamic effects of hypodermic injections on broad condylomes.

In constitutional syphilis, *local therapeutics* has to support the internal treatment for effecting and hastening a cure. In syphilitic induration and ulceration produced by it, the local treatment was quickly finished—extending it to total extirpation, cutting the whole indurated surface off with scissors, especially when seated on the *frenulum glandis*, prepuce, or on the skin of the penis, or labia majora or minora.

Not with a view, as often expressed, to check syphilis in that way, which is contrary to the whole course of the pro-

* Warty condylomes.—Translator's Note.

gress of the disease, but by extirpation, I aim to lessen the syphilitic virus and check its flow into the blood, regarding these infected places, figuratively speaking, as reservoirs from which the whole system could be contaminated.

In cases where extirpation is impracticable, the indurations have to be destroyed deeply and thoroughly, with the usual strongest caustics.

And here let me mention a new treatment, not only of simple, but of *obstinate ulcerations, such as have resisted almost every kind of medication.* I mean the use of medicated fluids by "spray atomization." [Vide my book, "Clinic of Diseases of the Larynx," vol. i. Inhalation, Therapeutics in Diseases of the Respiratory Organs; second edition, Berlin, 1865, p. 157.]*

I have treated in this manner, in the syphilitic wards of the Charité Hospital, extensive ulcerations. The "atomization treatment" begins with cold water or medicated fluid. In many cases the effect is a striking one. The ulcerated surface clears; the virulent secretion entirely ceases in a painless manner, and it seems that atomized spray of water has a very stimulating effect on the ulcer. Thus the temperature in sluggish erosions may be augmented, while a cooling off of inflamed ulcers and surfaces may be produced.

It matters not what the *modus operandi* may be by which the spray produces these results. I can testify to its efficiency in a great number of hard, obstinate cases, and think the treatment a valuable addition to local therapeutics.

Not only in cases already mentioned, did I see the good result, but also in *ulcerated bubos.* Whether having an

* The author here describes an apparatus constructed according to Bergson. We, in this country, may use much the same instruments, commonly called "spray atomizers."—TRANSLATOR'S REM.

idiopathic, sympathetic or virulent origin, I have always witnessed highly satisfactory results from the treatment with the atomizer in bubos consequent upon inguinal ulceration.

I have no cases of failure to record, in consequence of ulcerated bubo, when locally treated in this manner. The only fatal cases occurring were—one man, insane, who could not be induced to submit to it, and another man, recently dead, who had an ulceration of a bubo nine inches in diameter.

This result is of greater importance yet for us, considering that in our wards from three hundred to four hundred patients are annually treated. Some of these cases had been sent to us, where the ulcerations of the bubo already had reached such a grade of destruction that the underlying muscles could be seen as easily as in an anatomical preparation. We even had cases where gangrenous destruction of enormous extent, at the bend of the thigh, was existing.

Shortly after taking charge of the syphilitic wards of the hospital, and before using the spray, a number of fatal cases occurred in consequence of ulcerations of bubos. One died on account of the erosion of a blood vessel rendered gangrenous; another from the enormous undermining of the cuticle, extending over the whole right half of the abdomen and around to the spinal column. These cases, together with the entire absence of any like instances of fatality since using the spray atomizer, are ample reasons for sustaining this new method.

The favorable results since that time are the more remarkable, if we take into consideration the fact, that in other and extensive—and on this account not well circumstanced—charity hospitals, patients die of hospital gangrene frequently. This occurs even in the smaller hospitals.

According to Dr. E. Zeis, during the comparatively short interval of three years (1864–1867), of twenty patients having bubo, *three* died, or fifteen per cent. This occurred at the Dresden Hospital.

As to the *local treatment of broad condylomes*, the results are more favorable than with the before-mentioned indurations, because they are more simple; and further, the condylomatous papillary excrescences have a tendency to molecular destruction only, and very seldom produce deep-seated ulcerations.

I prefer for *local treatment of broad condylomes*, a paste of *zincum oxydatum*, or chloride of sodium and calomel. This is best of all used remedies.

Condylomata mixta and condylomata verrucosa, as named by me, are somewhat more difficult and complicated, since here the hyperplasia of the thick, hardened epidermis is to be overcome. In such cases it is not to be recommended to use the sublimate injection to accomplish the final cure, but resort, *at your earliest convenience, to extirpation with the scissors.*

In *condylomata mixta*, I clip at first only the point of the sharpened excrescences, on account of their origin from the effect of the *fluor vaginalis*, and even sometimes of blennorrhœa of Duverney's gland. As I have already stated, they are more of a local affection, and are not necessarily connected with constitutional syphilis.

III. SWELLING OF THE LYMPHATIC GLANDS.

Besides the already mentioned affection, I think in all *those processes* denoting a more advanced state of venereal affections, which go by the name of *secondary syphilis*, ac-

cording to Ricord, *there is an undoubted indication for employment of the subcutaneous injections of sublimate.* But it is necessary to make a suitable division between important and less important complexity of symptoms, and to modify accordingly the indications as to treatment. It is only in those cases where a certain range of characteristic symptoms presents itself that the injection ought to be resorted to.

It is sometimes difficult to arrive at an accurate decision, especially in cases where, after all syphilitic symptoms have subsided, only indolent swellings of the lymphatic glands still remain.

Here we perceive almost the same appearances we have pointed out above in *sclerosis*—that a *complete cure,* with a single course of treatment, will hardly be effected.

The second important fact to notice is, that after the first few injections, the swelled inguinal glands and glands of the lower jaw lose perceptibly in volume and hardness; even sometimes are reduced to half their former size. But a sudden stand-still in the progress of the cure occurs; the glandular swellings, to a certain point, cease to be affected by the sublimate; and even after the venereal *virus* is eliminated from the system, undesirable knots still remain.

The patients who have watched with considerable pleasure the diminishing of the wreath-like knots, become now uneasy in mind, since these enlargements are in bad repute not only among non-professional, but also among professional men. We physicians ourselves feel suspicious in these unyielding cases, that the still remaining glandular swellings are, to a certain degree, the store-houses and hiding-places for a portion of the syphilitic virus or the filter of the glan-

dular tissue. We fear that from here it will again enter the circulation and invade the organism.

On the other hand, we have well-authenticated cases where no relapse occurred, even with a remaining glandular tumescence; and, therefore, we may hope that the *adenitis chronica* (chronic glandular inflammation), which runs a tedious course, may eventuate in a perfect cure.

In cases where there are no suspicious complications we may abstain from injections, and use other medication—as baths, consisting of iodides and bromides, conjointly with the internal administration of iodide of potassium, without thus anticipating a complete cure in all cases.

Such therapeutics seem the more justifiable, because we cannot ascertain, with a certainty, the normal size of the gland. I here mean the difference in bulk between the existing swelled gland and the gland originally, for we can place no reliance on the declarations of the patients, as they proverbially deny the existence of any glandular swelling previously. Especially is this the case with the *glandulæ inguinales* and *submaxillares*, which are, even in non-syphilitic individuals, sometimes considerably enlarged, without having occasioned any notice.

Of greater significance are the cervical and occipital glands. These are sometimes so small, in healthy and non-scrofulous subjects, that in examinations of the persons the glands are detected with difficulty. If here a hyperplasic swelling arises, it is always suspicious. It is the same with the cubital glands. The swelling here is, according to my view, always a pathognomonic sign of syphilis, notwithstanding the assertion of some authors, that this swelling is always the product of a mechanical cause, especially hard working, &c. I have noticed in syphilitic women, who

never did any laborious work, a swelling of these glands, which only subsided after an energetic anti-syphilitic treatment. That mechanical causes may have something to do with these swellings, I have shown in the statistical tables of my former work on the Charité Annals (vol. xiv.). There I show that the swelling of the cubital glands occurs oftener in men who are mechanics than in women.

Lastly, I may remark that, in a relatively great number of cases laboring under *tertiary syphilis*, I have never found any swelling in the lymphatic glands, more especially because the seat of this tardy affection is in the deeper, rather than in the superficial layer of tissue connected with these named glands.

In the treatment of *adenitis*, inunction of unguentum iodinum, for softening the hyperplastic glands, had but little effect. I prefer rather to paint over the part with the tinctura iodini. I here wish to urge caution, lest too much local treatment by inunction excite the gland, and thereby interfere with the process of absorption.

IV. AFFECTION OF THE MOUTH AND PHARYNX.

Shortly after swelling of the mentioned lymphatic glands, and sometimes simultaneously with it, lues brings about, by absorption of virus, an *acute swelling of organs analogous to the lymphatics*, viz.: hyperplasia of the glandular elements and fibrous stroma of the *tonsils*. But swelling of the tonsils is, as is well known, a concomitant phenomenon of other diseases. These glands enlarge not only with scrofulous persons, but a cold may produce a hyperæmic swelling in healthy persons. Irritations, like smoking, too

free an indulgence in strong drinks, &c., are likely to induce this swelling.

A differential diagnosis can discover no characteristic criterion between tonsillar and syphilitic affections. The painless course of syphilis, as characterized by some authors, and the seemingly sharp division of the surroundings, especially at the hard palate, and extreme follicular affections of the anterior part of the mouth (M. Cohn) accompanying it, are, according to my observation, *no sufficient diagnostic symptom.* Neither can I take, for a convincing criterion, a *singular bluish color*, changing to red; nor of a red, changing to a copper-like color, as has been much emphasized by some authors, because these divisions of color are fraught with liability to deception, since the most deceptive of all our senses is this sense of color.

From the above facts, I find myself compelled *never to regard tonsillar swellings as an indication for treatment by injections.*

Quite an importance, however, do anginous swellings have, when completing the complexity of other suspicious symptoms, which, as single factors, may not be characteristic, but whose combination may have a great importance for the diagnosis of syphilis. I do not mean here those cases where syphilis has already been developed, nor where residues remained, leaving no doubt in diagnosis; but such cases where sure and decisive symptoms are absent, and others have to be taken for diagnosis.

If in such persons not only the *submaxillary glands* are swollen, which may be the case in scrofulous amygdalitis, but if the *cervical glands* also have been drawn into the hyperplasic process, or even the *submental glands*, and if there should be a suspicious and unexplainable *defluvium*

capillorum (loss of hair), if the pharynx or tonsils have on the mucous parts white, grayish patches or erosions (more fully to be explained by and by), I do not hesitate to order the injection, even if syphilitic appearances have vanished from the genitals.

The effect of the remedy is, in such cases, a very rapid cure—using only from $\frac{1}{2}$ gr. to $\frac{3}{4}$ gr. of the sublimate.

Not only is the cause of hyperplasia of the tonsils difficult to diagnosticate, but so is acute inflammation, arising from *fresh ulceration*. Real syphilitic ulcers are very seldom to be found in the first stages of the disease of which we treat here entirely, but they belong to a later period. I have seen in some cases ulcerations whose character did not seem syphilitic, even if the indirect cause may have originated in *lues*.

The ulcerative process hereby given is rather mechanical, but is according to my observation. In the interstitial tissues a specific inflammation commences; with the rising inflammation a hyperplasic process on the one side, and an exudative process on the other, begins—the effect being somewhat identical on the open and on the closed follicles.

These two categories of glands are excited by compression, as shown above, bringing about ulcerations thus: the follicles, which lead in an open way to the mucous membrane, are undergoing, by pressure and excitement, a round follicular ulceration, while the closed sebaceous glands form a confined submucous abscess, which opens slowly, and then forms a circular ulcer, spreading rather deeply into the tissues. The interstitial tissue in these parts changes by inflammatory hyperæmia, and very often ulcerates on account of the hyperplasia and exudation. This process does not form a round, but a diffused, infiltrated, irregular ulcer.

Even on other parts of the pharynx, where the *glandulæ acinösæ predominate over the sebaceous glands*, the same analogous process may take place.

The mucous glands, drawn into affection by sympathy with the surrounding swelled and inflamed interstitial tissue, are animated to a greater secretion, and very soon not only the quantity, but the quality of the secretion undergoes important changes. The already formed ingredients prevail over the intercellular fluid, which becomes more consistent, and by its final inspissation closes its own outlet. In time, a "*retention cyst*" is formed by the gathering of thick mucous, rising above its surroundings. After a longer or shorter time, the resistant cellular contents, by a process of softening, go into a retrogressive metamorphosis, in consequence of which an abscess breaks, and presents itself as a small follicular ulcer.

This ulceration may enlarge in two ways: first, on the arches of the palate by mechanical effects, produced by mastication and deglutition; secondly, the irregular histological condition of the affected tissue may take on the ulcerative process, enlarging, as has often been noticed, with the *velum pendulum palati*. Here is a singular circumstance existing. Between the folds of the anterior and posterior mucous surfaces there is situated a loose tissue, seeming to have but few vessels of absorption. If now an abundant exudation around the follicles is formed, as it sometimes happens, they will very easily become ulcerated on account of the lessened absorption. In this manner I have seen, in a few instances, ulcerations and even perforations of the described region—in persons, too, who have never been syphilitic, or when syphilis had been eradicated. Such ulcers heal, as is well

understood, after an ordinary local treatment, especially by pencilling with argentum nitricum.

Repeated observations, that especially scrofulous ulcerations, producing loss of the substance forming the pharynx, have been taken by the majority of physicians as syphilitic, and even as tuberculous, induce me, from a variety of cases, to select the following two. In both, later arising scrofulosis showed that a scrofulous diathesis was the intermediate cause of the ulcers, complicated with a diphtheretic affection:

Case 1.—Marie B., from G., fifteen years old, descends from a family where the father died with heart disease; mother and sisters are in good health. Patient had in her childhood measles and scarletina. When fourteen years old she was taken sick (I quote here the words of the attending physician, Dr. Strahler, who had the kindness to send me the patient), in winter, probably from a taking of cold. She suffered with scrofulous periostitis of the left tibia, and used cod liver oil. In the spring of 1866, she was taken with a catarrhal angina and laryngitis. The generally used anti-catarrhal treatment had no perceptible effect, and resorted again to the anti-scrofulous treatment. The patient took salt-water baths, drank mineral waters with whey, and later, cod liver oil, and was pencilled every other day with a middle-strong solution of *argentum nitras*, changing from better to worse, and *vice versa*. Her condition became more precarious after a voyage to Berlin, where a diphtheretic affection set in. Examination revealed a defect on the anterior border of the epiglottis, and ulceration on the mucosa of the arytenoid cartilages. Bathing, the use of "Adelheidsquelle" (a mineral spring in Germany), and inhalations were employed. The result, in a single fortnight, was a surprising one. Deglutition was less painful; appetite increasing; nutrition and strength visibly progressing. Unluckily, the cholera, which broke out in the house of the patient, retarded further progress. Patient was taken with diarrhœa, and her mother took her into the country. The treatment could not be continued, consequently the ailments of the throat increased and a hoarseness followed.

I saw the patient in October, 1866; found her greatly emaciated; muscular development slight; stooping gait; pale, greenish-yellow complexion, and of a general anæmic appearance. While telling me

her history, she was frequently interrupted by coughing; mostly complained of pain in deglutition, dyspnœa, cough and hoarseness, with a good deal of "hawking," and an expectoration of a tenacious sputum filled with air-bubbles. During eating, a portion of her food would pass through her nose.

Examination revealed *copious ulceration of the pharynx, and especially a part of the arcus palati-pharyngeus and velum was so united with the posterior roof of the palate that only a small orifice remained for communication with the pars nasalis and oralis. The uvula was, through ulceration, nearly destroyed. At the left tonsil there was situated a great ulcer, covered with unhealthy pus, extending to the posterior part of the palate roof and reaching deeper down into the larynx. Laryngoscopic examination revealed a discharging ulcer on the free border of the epiglottis, which had already destroyed a large portion of it. The ligamenta aryepiglottica, especially the left, was swelled, and seemed to be eroded on its surface. The vesicles of Galen were covered with pus. The arytenoid cartilages were swollen, and showed, particularly the left, an oval purulent ulcer, with sharp borders on the one side and flat edges on the other. The vocal cords could not be thoroughly examined, on account of the swollen thyroid cartilages. Shortly before the patient came under my care, she was examined by two other specialists, one of whom pronounced, as reported, her case incurable tuberculosis; the other seemed to think her syphilitically affected.* I at once *pronounced it to be a case of simple scrofulosis*, amenable to treatment, and proceeded.

Besides the already prescribed anti-scrofulous medication, I treated the *ulcer on the pharynx and larynx partly with argentum nitricum and partly with iodized glycerin.* The patient was completely restored to health in a few months. That the cure was a lasting one, a letter from my esteemed colleague, Dr. Strahler, confirms.

Case 2.*—Miss S. A., seventeen years old, of healthy parents, has generally been healthy, with the exception of an eruption on the scalp, lasting from earliest childhood up to her twelfth year, and which, as reported, disappeared regularly in summer and returned again in winter. According to description, this eruption seemed to have the char-

* The most important cases in my practice of former years have been mostly published in my already mentioned work on Injections of Sublimate. The material of the present work I have taken from recent experience, and hence have not taken cases from my researches on relapses.

acter of *eczema impetiginosum.* The treatment was only a local one. In the fourteenth year the catamenia commenced, but scantily, and have continued irregularly till the present.

In August, 1868, she was attacked, as it seems, with angina tonsillaris, accompanied with much pain, especially in deglutition. After a few days an abscess was formed, which having opened, a great deal of pus, mixed with blood, was discharged. After a few weeks, a relapse occurred—a new abscess was formed, also discharging blood and pus. Notwithstanding the use of gargarisms, the condition did not improve; on the contrary, deglutition was still more painful, and the food was regurgitated through the nasal passages.

The family physician, Dr. Stubenrauch, physician to the royal court, transferred the patient to me. He said that he had only seen such large ulcerations in this region exclusively with syphilitics, and therefore made a thorough examination of the patient and family, but failed to get any warrantable proof for his suspicion.

The patient was of medium size, well built, pale, and face somewhat œdematous. Exploration of the chest did not present anything abnormal. The cervical and submaxillary glands were but little swelled. *The inspection of the pharynx revealed a great ulcer, reaching deeply into the submucous tissue, of the size of a Prussian thaler, which seemed to start from the left anterior roof of the palate, having already destroyed both tonsils. The borders of the ulceration were livid and swelled, and somewhat undermined. The pus was of a dirty gray color, firmly adherent and of a thick consistency. Laryngoscopic examination showed a hyperæmia and slight swelling of the mucous membrane of the larynx, without loss of substance.*

Thinking that the basis of this disease was only scrofulous, I recommended internal anti-scrofulous medication and local pencilling with argentum nitras. After the lapse of some months, the patient was completely restored to health.

Exploration now showed a star-like cicatrix, reaching down to the vertebræ of the neck, which resulted in gluing the right roof of the palate with the anterior wall of the mouth. Of the left roof a small part remained. The tonsils were wanting entirely. A small erosion of the nose indicated an existence of ozæna scrofulosa, now already healed.

The same precaution is necessary for that *affection of the fauces, resembling sharp-bordered, grayish white, milky patches, that French authors have named "plâques opalines,"*

and recent German syphilographs, according to Sigmund, psoriasis oris.

The latter definition seems to me characteristic, regarding the pathological and histological processes, which are the same as in *psoriasis vulgaris.*

If these *plâques opalines*, as is sometimes the case in the early beginning, appear isolated, it is better always to await their further course, and treat them meanwhile on the expectant plan—even if the grayish white patches, encircled by a red border, commence *to elevate*, and the epithelial stratum, seemingly adipose, appears to thicken.

Only then do I commence therapeutical treatment, when changes of texture occur by which the *plâques opalines* change to *plâques ulcereuses*, as one may call them. They are thus characterized: after the removal of the fatty epithelium, the eroded hyperplastic papules appear flesh-colored, and around the milky epithelium molecular detritus is formed. We have a yet surer ground for diagnosis, since, besides the mentioned processes, *a condylomatous wreath-like excrescence of infiltrated papillary bodies exists, arising on those places which have a locality favoring their formation—as, for instance, the back part of the tongue, hard palate, &c.*

Sometimes these affections of the mucous membrane evince the most marked characteristics during advanced ulceration, which characteristics are on places not easy of access for examination. *I mean those pits called by me foveæ tonsillares, in which the tonsils are embedded.* The roofs of these pits are formed by the posterior surface of the arcus palato-glossus and arcus palato-pharyngeus.

By deglutition and phonation, attrition is sometimes produced on these mentioned roofs, and in this manner *excoria-*

tions and deeper ulcerations are caused. Especially is this the case when these parts are swollen by the syphilitic process, as they irritate themselves.

These symptoms are very obstinate, and remain quite a time, even after all syphilitic appearances have vanished and the venereal disease itself has been eradicated. Such patients complain of pains in the throat, which increase with speaking, mastication and respiration, and particularly with gaping. The sense localizing these pains is rather vague in the pharynx and larynx, and for this reason patients are apt to designate wrong regions as the seat of their complaints, and thus are very liable to mislead a physician not well versed in laryngoscopy. Such a physician, according to his examination of the pharynx, finds no affection explaining the complaints, and, from want of diagnosis, is obliged to declare the patient suffering from syphilis.

According to my experience, those tonsillar pits and their diseased formations may be seen in a double manner: *first, with a small laryngoscopic mirror, held sidewise; secondly, by using either the handle of the mirror or the finger to push the anterior roof of the palate aside and backwards.* If this manipulation should induce an effort to vomit, so much the better, because the looked-for places are seen the more clearly.

The ulcerations on the visible parts of the tonsils and pharynx may either be a residue of a syphilitic affection, or may be only an ailment of a local nature. The therapeutics in either case are not identical. In the first case, I use immediately injections hypodermically, with pencillings of the parts with *argentum nitricum;* in the other case, the latter is sufficient. But the application to the hidden regions is more difficult. Therefore, I recommend the physician to

hold the anterior roof of the palate back, and with the right hand apply the pencil of argentum nitricum, care being taken that it does not break or crumble. It is the safer and better way to use the porte caustic of Lallemand.

According to my experience, the *cavum pharyngo-nasale* has a like diagnostic and nosologic importance to the cavum pharyngo-orale. In this region we find the same histological elements as there, and that they are more subject to change, particularly on account of their histological and anatomical condition. The peculiar configuration and difficulty of access is a more favorable condition for unimpeded destruction of tissue than exists in the deeper part of the lower pharynx. We notice here that a tissue is predominant, which, according to Hiss and Luschka (two eminent German anatomists), is named *adenoid tissue*, having innumerable folds and chinks, like a ravine. Here the swelling of the extensive *glandulæ mucosæ*, analogous to the solitary glands of the intestines, very often and easily gives rise to erosion, which is seldom detected, because so hidden from observation. Here *swelling of the fibro cartilaginous substance of the tuba eustachii, covered by mucous membrane, easily produces functional derangement of the auditory nerve, like hardness of hearing, tinnitus aurium, &c.*

Moreover, there is in those hidden regions (thoroughly explored by but few anatomists) a *glandular, fold-like, elevated mass*, in some individuals in the neighborhood of the septum narium. *This mass* I wish to name *tonsilla pharyngea*, in opposition to Luschka, who designates the greater portion of the mucous membrane of the roof and posterior part of the pars nasalis with this name. In not very rare instances, I have here detected ulcerations in patients having syphilis, and mostly in a comparatively early stage of

the disease. I often took occasion to demonstrate such affections in my laryngoscopic and syphilitic lectures to my students, aided by the rhinoscope.

Such affections on that locality have a greater importance, since their existence is not easily produced by a simple cold. The cold atmospheric air enters not directly, as into the *cavum pharyngo-orale*, but it first passes by the nostrils through the *choanæ*, and gets to this point in a warmed state. Care has to be taken not to confound these ulcerations with those follicular affections occurring here very often without any visible lesions, and which are produced, according to Luschka, either by fatty degeneration of the cells or colloid destruction. With the destruction of the substance of glands, erosions will appear on the surface.

Case 3.—S., twenty-seven years old, from healthy parents, suffered, when three years old, from a swelling of the neck, which gave rise to spontaneous abscesses. When ten years old, he had the misfortune to cut with glass the brachial artery, so that ligation of the *arteria axillaris* was necessary. Slight atrophy of the left arm, still existing, occurred as a consequence. In the summer of 1864, patient was venereally affected for the first time. The ulceration on the penis was diagnosed in the beginning as a soft chancre, and treated accordingly. Only after six weeks' time was the physician convinced that the ulceration had the character of a hard chancre. The treatment then consisted in a combination of decoctum Zittmanni with pilulæ Dzondi. This treatment, with a run of ague, weakened the patient considerably.

A relapse of syphilis, occurring a short time subsequently, was again treated with a "sarsaparilla sweat cure" and Berg's pills; but still there remained an unyielding induration on the penis, which did not subside.

In the winter of the same year, a *papulous exanthem* was found upon the chest, beside *psoriasis palmaris*, with affections of the throat.

Entering a Berlin clinic, the patient again used decoctum Zittmanni and inunctions for five weeks, besides using for a time a solution of iodide of potassium.

After being discharged "cured" from the hospital, in four days (!) *psoriasis palmaris* showed itself again, together with the throat affection. Iodide of potassium was again used, but being insufficient, he was again obliged to undergo the inunction treatment for about seven weeks. For after-treatment he was sent to Kreuznach, and took forty-two baths.

In consequence of this treatment, a stand-still of the syphilitic disease occurred, and the patient went through the Bohemian campaign of 1866.

A short time afterwards, there appeared again a maculous syphiloid, for which he used, with good result, iodide of potassium.

In the summer of 1867, he went to Aachen for baths. Nevertheless, he suffered again in autumn with syphilitic throat affection, for which inunction for three weeks was again used.

In February he came to me for treatment on account of his throat. He was emaciated; had an ash-colored complexion; muscles well developed.

Examination of the pharynx showed superficial ulceration at the soft palate —at the uvula and surroundings. There was also a deep loss of substance of the size of a bean on the side and posterior surface of the left tonsil, which reached somewhat on to the posterior roof of the palate; but especially was there ulceration, of the size of a penny, on the convex surface of the soft palate, which I could only detect, naturally enough, with the rhinoscope. All the ulcers had a clearly syphilitic character.

On account of swelling of the cervical and submaxillary glands, swelling of the glands of the tongue, and erosions and infiltrations of the latter, I thought an anti-syphilitic treatment indicated, since the other medications had proved useless. I commenced with the subcutaneous method, which effected a complete cure with twenty injections ($2\frac{1}{2}$ gr.). For after-treatment we sent him to Kreuznach, and later to Ostende.

The patient has since been free from syphilitic trouble; but after the lapse of four months, those singular follicular affections, described above by me, commenced in different regions of the pharynx. They, however, yielded to local treatment entirely. They first appeared mostly under the form of a kernel, having the size of a pin's head, and being of a pale yellow color. They were embedded in the mucous tissue, and resembled small metamorphosed, fatty pouches, the contents of which soon became purulent, and breaking through the mucous tissue, the small ulcers were open, but were tractable to the cautery. On the

convex surface of the velum, by the confluence of follicular ulcerations, larger erosions were formed, which also disappeared with cauterization.

In consequence of collateral fluxion and exudation, a swelling of the mucous membrane and the subjacent tissue followed, causing a stenosis of the already narrow *cavum pharyngo-nasale*, and some trouble to the patient.

Now, not only my experience shows that these affections of the pharynx are not of a syphilitic nature, because I have very often seen such ulcerations in persons who never have had syphilis, but in this special case all other venereal symptoms were absent, as shown by the previously described specific ulceration of the pharynx not returning; and lastly, another evidence of the non-syphilitic nature is that the pencilled places always remained in a healed condition. New ulcerations always proceeded from other follicles.

I take this occasion here to direct attention to two interesting processes, which I think have never been mentioned. First, I saw in some cases, *on the free borders of the palate roof, and even on the soft palate, and further, on the tonsils and uvula, condylomatous granulations, which distinguish themselves in size and height from the commonly here-occurring vegetations*, fully resembling those *broad verrucous condylomes which were considered as an exclusive prerogative of the labia majora.* They resisted in the same manner all attempts at cauterization, and I had to extirpate them with the *scissors.*

Scarcely a yet more singular appearance was there in some cases, in which *I had already used injections with good result. The above described obstinate papillary granulations commenced to form in the region of the pharynx*, and so extensively, particularly on the mucous membrane, *that*

the greatest part of the anterior roof of the palate and uvula was literally covered with those grayish-white excrescences.

Very easily we could have been misled, and taken those appearances for a sort of an after disease, consequent upon the use of the sublimate, if those prolific cellular granulations had not showed most clearly the papillary and condylomatous type. On account of having derived the first time no result *on the vegetations*, by the continuation of the *injection*, I resolved to try other medication, especially the "sarsaparilla sweat cure" and inunction. But this mode of treatment also was without efficacy, and *I returned finally again, in these desperate cases, to injections, which brought about a complete cure.*

Recently I have observed several cases in *which, during and after an anti-syphilitic treatment*, the mentioned excrescences of the pharynx were formed in a similarly original way; also, these cases yielded to the subcutaneous injections with such complete result that we may prescribe it here as the *ultimum refugium.* The importance of the mentioned cases will permit and justify me in reporting a few more of this peculiar class.

Case 4.—Caroline K., twenty-six years old; well built; for the first time infected with syphilis, and received on the 17th of February, 1867, into Charité Hospital. Besides greatly ulcerated condylomes on the labia majora and right buttock, both *tonsils, the palate roofs and uvula* showed large white-grayish papules, resembling a comb, and having the appearance of condylomata mixta, as described by me; *i. e.*, pointed warts like the comb of a cock, with an infiltrated, broad papillary base. *These excrescences nearly filled the space in the mentioned regions of the pharynx, hindering their movement so that the voice took a nasal sound*, as in paralysis of the velum.

Subcutaneous injections, in suitable doses, to the amount of 2 gr. of sublimate, with internal administration of 3 dr. of iodide of potassium, and pencilling parts with argentum nitras, produced a complete cure.

Case 5.—Caroline F., twenty years old; for the first time syphilitically infected; was received into my ward January 17, 1867. Examination revealed broad, button-shaped condylomes on the labia majora, and a large, pus-producing, ulcerated, flat swelling, of the size of a dollar, on one of the hypertrophied folds in the vicinity of the anus.

On the tonsils, the anterior roofs of the palate and uvula, large, permanent papules were seated, forming a comb-like elevation resembling in appearance my description of condylomata mixta. They evinced much resistance to treatment. After an injection of 2 gr. of sublimate, the genital erosions disappeared, leaving behind the hyperplasia products in the pharynx, which required the addition of $1\frac{3}{4}$ gr. of the sublimate to effect their destruction.

Case 6.—Emily S., twenty-three years old; already three times in our hospital for syphilis, besides also for some blennorhagic troubles; was again received March 17, 1868, into the Charité. The following was her condition: soft chancre at the vaginal opening; tonsils markedly hypertrophied and somewhat eroded; inguinal glands swollen.

The patient was subjected to local treatment, *during which time gray-whitish condylomatous granulations were formed on the tonsils.* Notwithstanding our subcutaneous injections, these tonsillar granulations increased so much that they were, after fourteen injections (*i. e.*, after the equivalent to 2 gr. of sublimate had been used), the size of a pea, and covered much of the right tonsil. At the same time, the lower portion of the *arcus palato-glossus* was changed into a comb-like elevation, last-shaped, four lines broad and one-third of an inch long, with a firm texture and a whitish-gray color. Only after the further use again of 2 gr. sublimate and repeated cauterizations, was complete cure established.

Case 7.—Marie S., nineteen years old; was already in our hospital, February 29, 1868, with an indurated ulcer, accompanied with a maculous syphiloid. Being treated by injections, she was discharged seemingly cured.

Three and a half months afterwards, being sick, she returned, and we found again the maculous syphiloid, besides an extensively ulcerated broad condylome on the labia majora. The patient besought us to use with her inunction, and we prescribed of unguentum hydrag. cinereum ʒj daily. After having already used of this ʒxij, and the genital affec-

tion being but little ameliorated, we saw, to our surprise, the appearance on the tonsils, palate roofs and uvula, of grayish-white papules of the size of a pea. The papillæ of the roots of the tongue were swelled, and also the vocal cords reddened and eroded in the middle with the epithelium colored grayish-white.

After a still further using of the ung. hyd. cin. ʒxiij additional, together with the use of iodide of potassium, the hyperplassia of the pharynx did not disappear, but, on the contrary, enlarged.

With the consent of the patient, we began again the hypodermic injections, in doses of $\frac{2}{3}$ gr. *per diem*. On the second day after, a dose of $\frac{2}{3}$ gr. Slight symptoms of mercurial intoxication, in the form of gastro-enteritis, connected with great prostration, followed. They soon subsided, and after a few days we could use $\frac{1}{4}$ gr. doses. After having again used 2 gr., instead of the described papules, the tonsils were covered with small milky epithelium, which subsided after ten more injections of $\frac{1}{32}$ gr. each of sublimate. The patient looked, after the cure was completed, rather pale and anæmic, but felt entirely well, and all the functions were regular.

Case 8.—C. N., a student, twenty-one years old, was taken, according to his statement, a short time after incubation, with a chancre, soft in the incipiency, but which was said to be indurated subsequently. With this *ulcus durum* he commenced treatment with me. I immediately began the injections, continuing them with but few interruptions, and in doses of $\frac{1}{16}$ gr. of sublimate, without any noticeable effect on the induration.

After using it for six weeks, in all about 2 gr. of sublimate having been administered, the patient went home, during a vacation. Here he was treated, according to the view of a resident physician, for eight weeks, with inunction of mercury, $\frac{1}{2}$ dr. daily. This treatment had, according to the patient's views, a contrary effect, not producing the expected diminution of the sclerosis. There was rather an increase of the disease, extending over the whole prepuce, causing phymosis.

Simultaneously, the enlarged tonsils showed highly-raised mucous papules, which would neither give way by gargarisms of kali chloricum nor by cauterization with argentum nitras; so that the attending physician declared them to be a mercurial affection.

The patient returned in November to Berlin, and saw me again. On examination, I found on both tonsils grayish-white excrescences, of the size of a pea, showing clearly a syphilitic character. Inasmuch as the

internal medication from iodide of potassium proved without result for a fortnight, I resorted again to the injections of the strength of $\frac{1}{16}$ gr. *per diem*—resulting, in three weeks, in a perfect cure, with the entire disappearance of plaques muqueuses.

Ulcerative processes of the different regions of the pharynx are, in the *later period of syphilis*, of a more destructive and deeper going-in character, as illustrated in the details of the above cases.

As to the genesis of those ulcerations, there is but one voice, *that the origin is to be found exclusively in the so-called gummy tumors, of which there are two varieties*, namely, the diffuse gummy infiltration and the isolated circumscribed knots—gummy knots—*κατ' εξοχην*.

The authors give not only a very *detailed* description of this formation, but even describe their course and formative process very minutely. Especially is their seat on the posterior surface of the velum palati and on both angles formed by the velum and uvula, described. Like the gummata of the outside skin, they develop themselves in a slow and painless manner on the mucous membrane or sub-mucous tissue, either in single or group-like knots, of the size of a pea or bean. Although plainly divided from their surroundings, they appear less prominent and less hard and circumscribed.

By and by the infiltration pushes against the most superficial layers of mucous membrane, which softens. The membrane quickly reddens, the inflammation increases, and sometimes, after a few hours, from an "imperfect examination," the knots "perforate, and on the velum we find an irregular, round, funnel-shaped ulcer," &c.

Seeking after this detailed process of formation, the real material upon which these observations were based, it

seems strange that, with the exception of but two contradictory observations from the French literature, no other author till the present time has confirmed a case of the so-called gummy tumor in its integrity, before its destruction, or noted the perforation of the velum. The authors above alluded to are Bouisson and Parmentier. One refers to the subject thus: "Chez plusieurs malades atteints de syphilis invétérée des indurations tantôt circonscrites, tantôt diffuses, du voile du palais sans ulcérations de sa membrane de revêtement." The other describes "ces tumeurs gommeuses" as "petites et à peine sensibles au début," "*adhérentes á la muqueuse par une sorte pédicule et mobiles* sous les parties sous-jacentes et voisines." The form of pedicled gummy tumors described by Parmentier is not only in contradiction with all present descriptions, but is the reverse of the known histological nature of them altogether. Laying in the parenchyma of the tissue, never has there been found a trace of pedicled insertion.

But if we go over to the other authors, who seem to describe so accurately the course and progress of gummata of the velum without giving a case, we almost find an excuse for deficiency of cases and description of details in the fact that these tumors progress without being noticed, because they are situated on the posterior surface of the velum, and also because their course is painless, and therefore the patient but very seldom by his complaints arouses the suspicions of the physician. One author goes so far as to explain the tumor as "*invisible*," and after describing it, he recommends, for an early diagnosis of this latent disease, that the physician feel of the posterior part of the velum, or examine the locality with the rhinoscope.

But, granted that this manual examination (described by

another author as "troublesome") is of some account, I wish to emphasize here that the prognosis seems nowhere to be published, at least I have not found it.

Concerning the rhinoscopic examination, I would say, this method, even in a normal state of the velum, is very difficult, and more so must it be when the tissue by layers of small knots has increased in volume, and thus filling up the already narrow cavum pharyngo-nasale.

By my quotations, one can see that here, as in many other important questions in medicine, a *traditional view* has crept along without any sure foundation, and has been handed from author to author. Such views, sanctioned by tradition and impressing us with the idea that darkness must have hovered over the processes investigated, yet already better understood, are the cause why later authors do not take the care to re-investigate for themselves anew.

It seems to me as if all authors drew their conclusions "*per analogium.*" Proceeding, for example, with a right view as to the formation of gummy processes on the outside skin, they conclude that the *gummata* are brought about in the same manner on the velum and posterior wall of the pharynx. But whether this is really so or not, or whether there are other pathological circumstances connected with it, requires further investigation to determine.

My own observations have not enabled me to study the progress of a gummy formation, neither on the velum, nor tonsils, nor the posterior part of the pharynx.*

* Maisonneuve ('Leçons Cliniques sur les Maladies cau céreuses, Paris, 1854) narrates a case in which he had healed a tumor of the pharynx by iodide of potassium, which, after removal by an operation of Blundins, appeared again.

Knots of the described variety, but which resembled more the lupus kind, I have seen several times in the parenchyma of the tongue, but they did not terminate in ulceration. On the other hand, I have, in all those cases where I found ulcerations, as on the soft palate and posterior part of the pharynx, never seen knots preceding them in a primary form, nor as a casual coincidence of their formation.

Only on the palatum durum have I detected, as a following case will show, a tumor which, on account of its shape and consistence, could be named "gummous."

The processes which I had occasion to observe on the velum were either recent, or processes which had already existed for a long time.

In the first category belong:

1. *Diffuse infiltration*, of greater extension, of hard consistence and of a bluish-red color, plainly divided from the palatum durum. The connection of ulcerative destruction of such an infiltrated velum, I had not occasion to observe, because, by energetic medication, resolution of the infiltration readily occurred.

2. *Diffuse infiltration, just passing into ulceration*, which involved more or less of the velum, uvula and arches—having produced in its course loss of substance more or less deeply.

Secretion of such ulcers is not very profuse. The color is generally yellow-white, and often firmly embedded in the tissue, as in diphtheritis.

In some cases the erosion was in its incipiency, in others the tonsils were already wholly destroyed, and I could only see, instead, the ulcerated surface of the infiltrated walls of the anterior and posterior roofs of the palate towards the *foveæ tonsillares*.

3. *Single circumscribed ulcerations reaching deeper into the tissue of the velum and already threatening perforation.* They consisted mostly of an encircled, infiltrated, livid-red tissue, covered with a puriform secretion and putrid detritus.

The condition of these ulcers was in no case so fixed that I could draw a conclusion as to its origin, especially whether resulting from pustules or gummy knots.

4. *Ulcerations which already had given rise to infiltration, and extensive defects, mostly of the velum and uvula.*

As to the *second category of the long-existing processes*, I saw:

1. *Perforation of the velum, of small extension*, when the surroundings only showed a relatively insignificant inflammation.

2. *Entire or partial deficiency of the uvula and velum and posterior palate roof,—having resulted in a gluing together of the remaining portions to the posterior wall of the pharynx.* In such cases once in awhile, particularly at the upper point of the glued, adherent end, small ulcers, of a non-syphilitic nature, were visible. They chiefly originated from the mechanical effect of stretching and friction during deglutition and phonation, to which, being grown together and non-elastic, the parts were subjected.

The subjective complaints of the patient in all these mentioned cases arose naturally enough, considering the physiological functions of the affected parts, and also the lymphatic vessels, with commencing inflammatory processes. The patients complained of a very troublesome gathering of phlegm mixed with pus, and sometimes even with blood, thus causing a continual expectoration. Another part of the complaints is produced by the gluing together of the velum and the posterior wall of the pharynx, which greatly

interferes with deglutition and phonation. In consequence of the destroyed part of the cavum pharyngo-nasale, a *nasal sound of the voice* is produced and a *regurgitation of the food* through the nose takes place.

Concerning the other affections of the pharynx which have to be noticed here, I have already mentioned that only in one case had I occasion to see a tumor on the hard palate that might have been "gummous" (Case 12).

On the *tonsils*, that very singular glandular apparatus of the pharynx, I have very often seen, and mostly in a relatively early stage of syphilis, the well-known extensive swellings which occlude the *isthmus faucium* to a great extent. Syphilitic knots are generally said to occasion this, but I never succeeded in seeing or feeling them. And so far as I know, there has not been a single author of pathological anatomy who has observed or described a case.

On the *posterior wall of the pharynx* I had several times occasion to see and treat successfully syphilitic ulceration. The formation of the ulcer is generally round with seldom a ragged or irregular edge; the color mostly grayish; the secretion doughy, bad smelling and of a pus-like consistence.

That these ulcers here have their origin, not on account of mercurialization, (a thing much emphasized by anti-mercurialists,) is evident, "*ex-juvantibus et nocentibus*," because all the ulcers healed with the treatment of subcutaneous injections of mercury quickly and thoroughly.

Concerning the therapeutics of the pharynx the same indications prevail here as with affections of the larynx, and I shall speak more fully on this point in the next chapter.

In the selection of the following cases I have taken those in which either interesting pathological processes occurred, or in which the effect of the subcutaneous medication was

clearly visible. The following case shows that even a perforated ulcer on the soft palate may be fully healed and the perforation closed, if only early, energetic, hypodermic injections of sublimate are employed.

Case 9.—A merchant, W. M., twenty-eight years old, coming from a healthy family, suffered in his childhood with "tetanic convulsions and loss of consciousness." Later he had acute muscular rheumatism. His first venereal infection dates from the year 1860 and consisted of an *ulcus durum*, for which he used for four weeks continuously iodide of mercury. Six months subsequently there was a reappearance of the syphilis in the form of *psoriasis palmaris*, for which the same treatment was used with success.

Three years after he had inflammation of the eye which was diagnosticated as syphilitic iritis—with a later return of the *psoriasis palmaris*.

In the beginning of the year 1868 Dr. Wallmueller, his family physician, being consulted on account of his throat, detected a suspicious ulcer on the soft palate, and immediately sent the patient to me.

I perceived the presence of a perforating ulcer on the soft palate somewhat larger than a bean on the right side of the uvula. The borders were well defined, and the secretion purulent, of a fatty appearance but not very abundant.

Besides swelling of the inguinal and cervical glands, there was no other sign of syphilis. I commenced with the sublimate injections, the patient visiting me daily. But after the tenth hypordermic dose, *acute muscular rheumatism set in*, and the patient was obliged to remain in bed a fortnight. After pausing a few days, I recommenced the treatment at the patient's house, notwithstanding the very marked febrile symptoms. After using the amount of $3\frac{1}{2}$ gr. of the sublimate the ulcer was completely cured and the perforation closed. It is noticeable *that the course of the acute muscular rheumatism, according to the patient and family physician was, with the sublimate injections, a shorter and milder one than usually.*

The next following case is interesting from the fact, aside from the quick result of the subcutaneous injection, in opposition to the already used treatment with iodide of potassium without restoration, that it is a sure proof that ulcerous

syphilitic affections (and in this case an ulcer of the soft palate), do arise without having previously used mercury.

Case 10.—Joseph S., twenty-two years old, of sound parents and of a healthy habitus, has always been in good health with the exception of pneumonia, from which he recovered at the age of ten, and a slight rheumatic affection of the left knee joint.

In the month of July, 1868, he became infected, and according to his statement, a small pustule was formed on the inner lamella of the prepuce, and out of which he, himself, pressed the pus-like secretion. It seemingly healed with only a dry bandage. Six months afterwards he had pains in his throat and he called on a physician, who prescribed 3ʒ of iodide of potassium, after which the affection left. After a time the pains in the throat returned, and notwithstanding this, and a discovery by inspection of his own pharynx, of the presence there of "whitish ulcers," he neglected to seek relief from a physician.

February 6th, 1869, patient consulted me. I found on the prepuce, at the place of the former ulcer, a cicatrized, white appearance of skin devoid of pigment, having a rather indurated feeling. The neighboring inguinal and more distant lymphatic glands were in a normal state. On the left nostril was an ecthymous incrustation. Small knots of the size of the smallest shot, and covered with the thinnest hard dry coating, were near the region of the left corner of the mouth, and on the forehead close to the border of the hair. The inner walls of the nostrils were slightly eroded, somewhat swollen, and covered with a rather thick greyish hard coating.

The whole of the soft palate with the uvula and palate roofs were considerably infiltrated and covered in its whole extension with a number of greater or smaller ulcerations. The ulcers themselves reach in some parts, deeply into the tissue, being sharp pointed and reaching island-like over each other. The tonsils I found completely destroyed, also the inner walls of both palate roofs showing deep-seated destruction. Secretion of the ulcers is of white, caseous, mushy-like appearance, and so adherent that in trying to remove it, bleeding commenced.

On account of great swelling of the soft palate, a desirable rhinoscopic examination could not be made. The laryngoscopic examination did not reveal anything abnormal.

Deglutition is somewhat painful and the voice somewhat dulled.

I began immediately the hypodermic injections in $\frac{1}{3}$ gr. doses *per diem*, and after using 3 gr. altogether, a complete cure was accomplished.

In the following patient we see, after a treatment by the subcutaneous method, but probably on account of too small a quantity, ulcerations springing up on the soft palate. With a continuance of the injections she was cured.

Case 11.—Henrietta K., twenty years old, has been treated five different times in our hospital for syphilis—once locally, three times with the sarsaparilla sweat cure, and the fifth time by subcutaneous medication with the sublimate, using altogether $1\frac{1}{2}$ grains. The affections consisted mostly of broad condylomes, maculous and papulous exanthemata, besides condylomatous ulcerations of the soft palate.

She came under my care the sixth time February 12th, 1869, and we found besides condyl. acum. near the labia majora an ulceration, quite extensive, on the palatum durum. *On the right half of the soft palate, on the anterior and even on the posterior part, examined with the rhinoscope, we saw ulcerations which had destroyed nearly one half of the uvula. The remaining part was hanging down loosely. The base of the ulcer had a yellow appearance, with edges sharply defined, not much reddened, with secretion very scant.* Deglutition was, strangely, not much interfered with. The lymphatic glands in the submaxillary and cervical regions were much swollen, and those in the inguinal region but slightly. On account of the robust appearance of the patient, we used, at once, $\frac{1}{4}$ gr. sublimate hypodermically: but this dose seemed too strong, as appearances of mercurial intoxication, with diarrhœa and colic, also vertigo, were soon manifested. After a pause of two days we resumed treatment, giving $\frac{1}{8}$ gr. and soon $\frac{1}{4}$ gr. doses of sublimate, without any hurtful effects, so that in seventeen days the patient was discharged completely restored to health.

With the following patients there is, beside ulcerations on the *palatum durum*, a tumor justifiably called "gummy."

Case 12.—Albert S., twenty-seven years old, mason by trade, of healthy parentage, was up to his twenty-fourth year of excellent health, when he contracted a hard chancre which developed its presence four weeks after coitus. He remained without any treatment, a stain-like

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On syphilis, and its treatment with subcutaneous sublimate injections. 1882.

exanthem appearing. He began now to use a mercurial treatment, which induced a latency in the disease for eighteen months, when a relapse occurred in the form of syphilitic throat affection, which is reported to have been an erosion of the pharynx. But in spite of various treatments with iodide of potassium and mercury, extensive destruction of the soft palate was produced, followed by necrosis of the palatum durum and exfoliation of several pieces of bone. He was recommended to use Dzondi's pills, but without any result. Soon the nasal bones became involved. On the 18th of June, 1868, he was admitted to the Charité with the following *status prasens:* Patient of *gracile habitus*, pale and anæmic in color, very much emaciated, weak muscles and shrivelled skin, with inflammatory swelling of the gums, probably consequent upon recent salivation.

Exploration of the pharynx showed putrid ulcers on the hard palate, of offensive odor, and with an already extensively existing ulceration of the bone. It was possible to reach through the hard palate into the cavum narium with a common catheter. In the middle of the right half of the hard palate, a tumor was to be seen of the size of a bean, elastic to the touch, borders well defined and of a reddish yellow color. It very easily could be taken for a gummy knot. On the septum narium there were also large unclean ulcers having a fetid smell. The other regions of the pharynx and larynx were intact. On the prepuce there was a hard cicatrix, and on the left testicle a gummy swelling of the size of a hazel-nut, and painful when touched.

On account of a mercurial stomatitis we used a gargarism of chlorate of potash and the same internally. This trouble having subsided in the course of five days, we began to use injections of sublimate, commencing with $\frac{1}{8}$ gr. per diem, but soon reaching $\frac{1}{4}$ gr. daily.

The patient endured the course of medication very well, but on account of constipation laxatives had to be used occasionally.

Whenever prodromes of *stomatitis mercurialis* occurred, an interruption of treatment for eight days was ordered.

After having used the amount of 6 grains of sublimate, the patient was discharged cured, in the middle of August, 1868. The local treatment of the "gummy tumor" on the scrotum consisted in binding it with straps of sticking plaster. The ulcers of the nose and cavity of the mouth were pencilled with argentum nitricum, they cicatrizing over completely. The perforation itself was closed, so that a small opening only remained.

April 7th, 1869, he introduced himself again to me, and I was convinced of the completeness of the cure.

The following patient from my private practice showed destruction of the pharynx and nose—the first I have met where it existed to such an extent. Medical literature seems to have described such cases but very seldom.

Case 13.—Henrietta R., thirty years old, of cachectic appearance, delicate constitution, pale, anæmic color of the countenance, flabby muscles and parched-like skin, was healthy in her youth. She was infected with syphilis for the first time when twenty-five years of age. The patient is apathetic and rather stupid, and therefore nothing reliable could be ascertained from her. The first symptoms reported were ulcerative affections of the genitals, for which only external remedies had been used, like lotions, washes, &c. She repeatedly assured us that she had *never taken any internal remedies.*

A year later she was admitted into the Charité. The history of her case was lost or could not be found. According to the patient, she had sores on the body and in the mouth, and the sarsaparilla sweat cure and iodide of potassium constituted her medication.

December 22d, 1868, she was again admitted into my wards, and the *status praesens* was that on the whole body there were white, shining, star-like cicatrices of different sizes, as is often seen in consequence of lupous ulcerations. The face and forehead had large scarred surfaces. In the middle of the forearm a lupous superficial ulcer could be seen, of the size of a Prussian dollar, with sharp undermined borders and a thick, pus-like secretion. *The cavity of the mouth and nose showed marked destruction. By the complete absence of the soft palate and almost total disappearance of the hard palate, both cavities were united into one. Of the hard palate there was remaining only an arch of two shreds, the larger of which, the size of a common goose quill, ran from the right side of the upper jaw towards the posterior wall of the pharynx and was attached thereto. The smaller shred, the size of the quill portion of a hen's feather, commenced from the right pterygoid process, reaching oppositely in the direction of the maxilla superior.*

In the nasal cavity, the conchae superiores, mediae, and inferiores were also destroyed. The openings of both tubae Eustachii were easily visible. The remaining mucous membrane on the eroded locality was covered with a pus-like secretion of an offensive odor. On the posterior wall of the pharynx, there were deep-seated syphilitic ulcers of the size of a penny. She was per-

fectly aphonic. Deglutition was surprisingly easy, on account of the patient bending back the head somewhat, when taking solids or fluids.

Laryngoscopic examination revealed only a thickening of the epiglottis. All the remaining organs were intact.

It was noticeable *that the patient had been pregnant six or seven months.*

Our treatment was subcutaneous injections of the sublimate, and common injections of chlorate and permanganate of potassium into the cavity of the mouth and nose.

We had frequent interruptions of the sublimate treatment on account of salivation occurring. For this reason we used iodide of potassium internally, but had to return to the subcutaneous use of the sublimate again in order to bring about a cure.

After using, in the course of three months, $2\frac{3}{4}$ gr. of sublimate, the lupous ulcer on the arm was cicatrized and also the ulceration of the pharynx. The mucous membrane of the cavity of the nose and mouth, which as noticed were in open communication, was rid of all secretion.

The looks of the patient were so altered, and according to her own statement she felt quite well, that we discharged her cured.

Case 14.—F., twenty-eight years old, a blacksmith by trade, of a delicate constitution, flabby muscles, sallow complexion, and already gray hair, was taken into the Charité December 29th, 1866.

Patient had a chancre in 1857, for which he used blue pills. Another similar affection was only locally treated. In 1863 he had chancre for the third time, and used only calomel till it produced salivation. His present condition he noticed only since three weeks previously.

Examination revealed an ulcer of the size of a penny and deeply seated, covering the anterior and posterior left roof of the palate and even the tonsils. It had destroyed a portion of this region in such a manner that a cavity the size of a gold dollar was produced. The chest was covered with papulous and vesiculous exanthemata. The lymphatics in the different regions were only slightly swollen.

I commenced using injections hypodermically of $\frac{1}{4}$ gr., but soon increased strength to $\frac{1}{3}$ gr. Already after the use of 1 gr., the described ulcer was clean and partially covered with epidermis. The exanthemata were mostly healed also. After using $2\frac{3}{8}$ grains of sublimate and 2 drachms of iodide of potassium, the patient was discharged cured.

Case 15.—Anna K , twenty-six years old, been already three times in

the Charité during the last five years, but was only locally treated, and was admitted again October 1st, 1868.

Present condition.—Patient is of good healthy appearance; has on the genitals only slight erosions, small ulcers on both labia majora and a cicatrix on the posterior commissure of the vagina. There are only a few dirty, pigment-colored patches on the body. Examination of the pharynx *showed an infiltration of the greatest part of the soft palate, which was sharply divided from the normal color and quality of the hard palate. Left of the uvula there was an ulcer of the size of a penny, perforating the velum, with ragged, undermined, infiltrated borders.*

The lymphatic glands were swollen in the inguinal and submaxillary regions, and more still in the cervical. In doses of $\frac{1}{8}$ gr. each of sublimate, thirty-one injections were given which, together with local treatment, cured the patient, so that she was discharged in thirty-two days.

In the following cases no sure criterion of a syphilitic affection could be found.

Case 16.—Bernhardine K., twenty-one years old, was taken, October 20th, 1868, into our hospital, with the following symptoms: Pigment patches over the whole body, more or less spread, genitals of normal size, lymphatic glands nowhere swollen; *deep ulcerations on the posterior roofs of the palate, and both tonsils destroyed. A large ulcer on the soft palate which has destroyed the greater part of the left side, extending to the border of the hard palate. The border red and fatty-like, is partially covered with highly elevated granulations. The epiglottis thrice as large as natural, especially on the right side, with superficial erosion. An ulceration existed, of the size of a pea on the left processus vocalis. The left vocal cord was somewhat infiltrated.*

After twenty-five injections amounting to 4 gr. in all, the patient left cured, having stayed five weeks only.

Case 17.—Mrs. S., forty-eight years old, received into the hospital October 16th, 1868. Nothing could be found on the body indicating syphilitic affection.

In the pharynx, the greatest part of the soft palate was destroyed, and the remainder glued on the posterior wall of the cavity of the mouth. On the border of this, was an ulcer of the size of a penny, covered with a putrid, dirty, pus-like secretion, the edges being undermined. On the mucous membrane of the nasal cavity, superficial ulcers were found, partly incrusted.

Complete restoration in four weeks was brought about by the use of twenty-five injections of $\frac{1}{8}$ gr. each.

Case 18.—G., a drover, thirty-five years old, taken into the hospital August 12th, 1867.

Examination revealed *extensive, deep-seated ulcerations, with hollow, reddened borders, and covered with a yellow, pus-like secretion, situated on the soft palate. There was a destruction of one half of the entire uvula reaching more upon the left side to the middle of the velum.*

Ulcerations of a slighter character and smaller extension were seated on the posterior part of the pharynx and left palate roof. Patient had two years previously an ulcer and different exanthematous eruptions.

He used mercury internally. The present condition only developed itself a few weeks ago. No other syphilitic complication could be found on the body. Subcutaneous injections of $\frac{1}{8}$ gr. each, completed the cure in twenty-one days.

Infectio per os.—As known, there is quite a controversy concerning the *important* question whether syphilitic infections can only be produced with direct contact of the genitals, or if *also other places of the body may be original openings for infection.*

Although the oldest authors on syphilis were obliged to consent to a possibility of *a direct infection by way of the lips*, and even Torella,* Fernelius,† &c., reported several cases, yet since the *dualistic view* of the nature of the syphilitic virus has gained more ground, the development and origin of primary syphilitic sclerosis *viâ* the lips has been entirely denied by Ricord and his disciples.

Only after Ricord's theories on the changing of the soft chancre into the hard were completely refuted by exact experimental demonstration, and especially, after the fact was established that syphilis could be inoculated from every

* Et hoc accidit propter mammas infectas, *aut faciem*, aut os nutricis *seu cujus* alterius.

† Juvenem, mulierem gallico morbo depravatam, ore exosculare assuetum nullo per jovem exercitatio coitu, in morbum gallicum incidisse.

syphilitic secretion,—secretion of the hard chancre, of the broad condylomes, as well as of the tonsils,—were the views of Ricord abandoned. *At the present day but few syphilographs dare to doubt the possibility of an infection per os.*

There have recently been reported so many cases, especially by Fournier, Rollet, Koebner, &c., with proof so corroborative, that the above remarks are well substantiated.

Further, I had a relatively great number of such cases under my observation, and I may be permitted to narrate some of them with the following clinical remarks preceding.

Generally the original *syphilitic ulcer on the lips* has such a singular character, that it can not be confounded with an abscess produced by a condylomatous, destructive process. *The latter may have entered ever so largely into ulcerative metamorphosis, it will not enter the tissues so deeply, nor have such a characteristic, hard, sharp-edged basis surrounding it as the ulcus durum of the lips.* Great caution must be used in forming a diagnosis from the remaining criterion. Here also, as with the ulcus durum, the principle holds good that never a single symptom, but the combination of all the symptoms, should be considered and have the preponderance.

Of great value for the decision here in this place is the seeming absence *of initial syphilitic affection and the presence of an intact hymen in women.* And as, even in proved infection *viâ* the lips, a syphilitic affection may occur afterwards on the genitals in consequence of a syphilitic diathesis, other diagnostic signs must be considered. These are the peculiar course and development of the lymphatic glandular swellings, which show themselves much *sooner in the region of the throat than in the inguinal regions.* Generally the submental glands swell first, especially often in the vicinity

of the *spina mentalis interna*, between the insertion of the *musculi genio-hyoideus* and *genio-glossus*. Secondly, those glands inflame which are situated more nearly at the angle of the lower jaw, and not always the superficial only, partially covered by the *platysma myoides*, but also, even sometimes the deeper glands which are scattered in the *trigonum* cervicale, and which receive the *vasa efferentia* of the glandulæ faciales profundæ. In one case where the ulcer was situated on the upper lip, I found on the corresponding left side of the face some small swollen glands in front of the ear near the parotis, which glands may be termed the glandulæ zygomaticæ. Only after these glands are more or less inflamed does swelling of the inguinal glands occur—preceded in some cases by swelling of the cubital glands. But here it must not be forgotten that also scrofulosis brings about similar glandular inflammation.

Some authors, like Zeissl for instance, have endeavored to draw a distinction between syphilitic and scrofulous swellings of the lymphatic glands, as largeness and unevenness of the scrofulous, in opposition to the syphilitic.

Koebner characterizes (page 62 of his Clinical Reports) such ulcerations on the lips and mucous membrane of the pharynx, as the rapidly developing symptoms of the usually later period of syphilis, which may be named "*syphilis gallopante* (galloping syphilis), causing the physician to fear for the life of his patient."

My experience does not at all verify this assertion, as seen in the following cases. It may be different when, not the lips, but the finer mucous membrane of the deeper lying pharynx is infected with the original syphilis, as has happened in some cases where infection resulted from catheterizing the tuba Eustachii. In the greater number of my

cases the symptoms were not very severe, nor were they accompanied by fever, nor complications fraught with danger. But I must remark that such persons were generally very anæmic in appearance, and the cure in most cases was retarded.

Case 19.—L., a merchant, twenty-seven years old, is a son of sound parents. He says he has only once ever been sick; about four years ago, with inflammation of the bowels. *A syphilitic infection he denies most emphatically, but confesses to repeated intercourse with women.* His present disease dates back to December, 1868, and began under the form of *acute angina tonsillaris*, and *he says the swelling of the right submaxillary glands was rather obstinate.* The course of the disease was a very tedious one, and only after the lapse of three weeks, and several incisions of the tonsils, did a change for the better take place. At the same time he had a yet existing exanthema, which was first regarded as small-pox, and, on account of its unyielding nature, the patient came to the hospital.

Examination on the 13th February, 1869, revealed:

A good muscular development and healthy appearance. The genitals showed no ulcer nor cicatrix. *But on the under lip there was a somewhat hard, whitish-grey* colored appearance seemingly a cicatrix. The whole body, especially the *chest and back, is covered with dirty, reddish papules of the size* of common shot. Some are covered on the point with a gray-white epidermis, others have become metamorphosed into small pustules. On the right *malleolus externus a small swelling was detected, which seemed to arise from the periosteum.*

Inspection of the *pharynx and cavity* of the mouth revealed an erythema and swelling of the mucous membrane, the tonsils and palate roofs. *On the right side of the posterior wall of the mouth opposite the isthmus faucium, a scar is visible about five-sevenths of an inch long, sharp-edged, somewhat elevated and very hard to the touch.*

Laryngoscopic examination of the very hoarse patient revealed:

Epiglottis very much swollen. On the right free border, there *was an ulcer with a firm adherent color, extending towards the laryngeal surface. The cords of the ligamentum aryepiglottica*, the mesoarytenoid folds were swollen and the vocal cords slightly reddened. The glands of the tongue were swollen and partially infiltrated, and here and there superficially ulcerated.

Rhinoscopic inspection showed swelling of the mucosa of the cavum pharyngo-nasale, covered with thick tenacious mucus.

The *inguinal glands were but slightly enlarged, but the cervical and submaxillary*, particularly the latter, were swollen on the right side.

Subcutaneous injection had a quick result on the pharynx, but less so on the papulous syphiloid, which only after the use of ½ gr. of the sublimate, began to disappear. We used, altogether, only one grain for complete restoration.

Case 20.—Mr. N., twenty-two years old, originating from a family where the father is healthy, but where the mother has epilepsy, had always been healthy up till October, 1868, when he discovered on the left side of his under lip a "small crack." This "cracked lip," as he termed it, did not seem to heal and was treated by his family physician with glycerin and lastly with nitrate of silver, but without result. After an elapse of three weeks, the lymphatic glands on the side of the neck began to swell. Two somewhat carious teeth, thought to have caused this, were extracted. Notwithstanding, the "cracked lip" grew worse and took a form like glandular swelling. On the 22d November a celebrated surgeon was consulted and diagnosed chancre of the lip. The patient consulted me a little time afterwards, when, except from a pale appearance, he seemed of a healthy constitution.

The submaxillary glands, from the spina mentalis interna to the angulus maxillæ inferioris were much indurated and swollen. On the under lip there was an ulcer of the size of a penny covered with a brown crust partly, and partly with a tenacious, fatty detritus, of thick consistence. It had a well-defined border also.

On the body there was a seemingly developing maculous syphiloid. On the *genitals*, I could detect nothing suspicious. The inguinal glands were not swollen.

We began, immediately, the use of the sublimate injections, but it could be borne only in small quantities by the sensitive patient. But the ulcer soon healed without leaving a scar. The indolent submaxillary glands were lessened also, but 4 gr. of sublimate, in about fifty injections, were given, before a real change for the better could be seen.

After the treatment was completed, the patient felt perfectly well till three weeks thereafter, when he had an epileptiform attack. Another occurred about one week later. During the first attack much vomiting was present, and attending the second there was considerable diarrhœa. When I saw the patient I detected on the right cheek a papulous infil-

tration of the size of a penny, of a brown color and medium soft consistence. There also was an infiltration of the right upper eyelid. On the left swollen tonsil there were gray-white patches, the patient complained of a heavy feeling in his head. I prescribed iodide of potassium, because the patient did not consent, then, to a repetition of the hypodermic injections.

To prevent repetition of the following material, I emphasize that in all the six following cases there were symptoms present which I have characterized, in words preceding this theme, as *sure proof* of infection by means of the mucous membrane of the mouth.

The positive proof on the lips, the negative on the genitals, and the singular course of the swellings of the lymphatics, described in extended detail, were supported by the most accurately taken histories. That the word of the patients themselves was only taken with the greatest precaution, is self-evident.

Case 21.—S., fifty-four years old, received under No. 3293 on the 20th May, 1867.

The ulceration on the lip was here accompanied with loss of sleep, headache, and *buzzing in the ear;* at the same time a *clearly-defined polymorphous exanthem was present, showing those characteristic pigment colors, remaining after a maculous syphiloid. There were also papules and scales besides a marked defluvium capillorum, and angina condylomatosa.* The use of 3 gr. of sublimate was sufficient for a perfect cure.

Case 22.—Ch. H , day laborer, twenty-one years old, was received as No. 2710 on August 22d, 1867.

Here also were *exanthema maculo-papulosum defluvium capillorum and angina condylomatosa,* and the symptoms of ulcer on the lips. Complete restoration was effected by the use of 4 gr. sublimate hypodermically.

Case 23.—K. H., laborer, received as No. 3957 on 25th June, 1868.

Besides the *mould-like, broken and characteristic ulcer on the upper lip, there was a maculous syphiloid and an extensive swelling of the tonsils.* Of

the greatly swollen submaxillary glands one had formed itself *into an abscess.*

Sublimate injections, to the amount of 4 gr., completely restored the patient.

Of *cases which concern women*, I have selected the following three:—

Case 24.—L. H., a servant girl, twenty-five years old, was received into the hospital April 25th, 1867.

Diagnosis was based in this case on an *infection per os. There was an unruptured hymen and a swelling of submaxillary glands, more extensive than of the inguinal.*

The accompanying symptoms were a *papulous and maculous exanthem and superficial broken-down condyolmatous granulations on the labia majora.* That such may be developed in the advanced progress of syphilis, even if infection took place in regions remote from the genitals, I have already pointed out.

Case 25.—Ch. F., servant girl, received April 23d, 1867.

Examination revealed an intact hymen.

Besides the characteristic ulcer on the *under lip and large swellings of the submaxillary glands, there was a swelling also in the axillary region. Along with the already existing maculous and papulous exanthemata, there was also a gummy swelling on the frontal bone, which disappeared after completion of treatment.*

Treatment in this case consisted in the use of *iodide of potassium.* Exact dates concerning the time and amount of treatment are wanting in our hospital journal.

Case 26.—E. Sch., twenty years old, admitted at her own request on the 27th of April, 1866, said that she only once in her life had indulged in coitus, on March 15th, 1865, and her whole deportment verified her assertion. Her lover kissed her repeatedly and she remembered that he had cracked lips; and she noticed shortly after an ulcer on her under lip, which disappeared of itself. Subsequently she detected some patches on her body and a little later affection of the genitals.

Inspection revealed, *condylomata lata near the anus; on the labia majora,*

plicas femorales, tonsils, and at the angle of the mouth, muculous exanthema. The submaxillary glands were very much, the cervical glands somewhat, and the inguinal glands not at all swollen. The hymen, with the exception of a small rent, was intact. Two and a half grains of sublimate, hypodermically used, restored the patient to health.

As we think we have established the occurrence of an infection by the mouth, and especially by the mucous membrane, *we can also affirm that a child may convey the syphilitic virus to a wet nurse and vice versa.*

I shall quote here a very remarkable case,—in itself almost a unicum,—in which a woman nursing her own child was infected by a strange child, while nursing it, who had hereditary syphilis; afterwards she infected her own child. Here the singular combination occurred that a strange syphilitic child infected a hitherto healthy nurse, producing ulcers from which the healthy child was infected. The case in its further development has still more singular symptoms, as, after the woman had been thoroughly impregnated with syphilis she infected two men, of whom one died on account of this disease, and the other living was taken with the disease also. The woman furthermore had a premature delivery of a child, which very soon died.

A child from her second marriage has completed its sixth year, but it recently had a pustulous exanthem, showing plainly the character of syphilis. Lastly, the daughter, eighteen years old, who was originally infected from the breast and who suffered from the *same throat symptoms* as the mother, was taken two years ago, after she seemed completely cured of the syphilis, with syphilitic disease of the bones and a lupus.

The course of this singular case is almost similar to one published two hundred years ago by Sartorius.

Case 27.—Mrs. F., grocery keeper, forty-three years of age, of healthy, robust constitution, good complexion, twice married and mother of two yet living children, was up to her twenty-fifth year, according to her statement, perfectly sound. She was confined and nursed her own child; but having a large quantity of milk, she took a strange child under her care, acting as a wet nurse. This child, as subsequently shown, came from a syphilitic mother, and infected the nipples of the nursing woman in such a manner, that venereal ulcers were developed, of which she took no notice. But her own healthy child was infected by nursing the breast and *certainly per os*. The strange child died a little time afterwards, notwithstanding an antisyphilitic treatment.

The mother and her infected little daughter had soon afterwards syphilitic affections of the throat, which were treated by the same physician properly with a solution of mercury, and cured in a short time. But the husband becoming infected by his wife, had several syphiloids, afterwards tophi on the frontal bones, and lastly an apopletic attack, in which he died in our hospital.

Some time afterwards she married again a healthy man, although she suffered from relapsing syphilitic affection, especially in the throat, for which she used, from time to time, with more or less success, different antisyphilitic remedies—as iodized mercury, pills, inunction, Decoctum *Zittmanni*, &c.

She gave birth to a child in the eighth month of pregnancy, but it died in consequence of hereditary syphilis after five and a quarter months. Shortly afterwards she was confined at proper time with a second child yet living, aged seven years. The same was healthy and of plump appearance till the present, but it now has a suspicious exanthem.

The second man was said to have been infected by the woman, but I could get no positive proof of it.

Eighteen months ago my esteemed colleague, Dr. Koblank, had the kindness to introduce this interesting family, and I have had them for demonstration in all my recent clinical lectures. Seeing the patient for the first time I noticed:

1. *In the woman, a thickening of both arcus glosso-palatini.* The right tonsil was atrophied and showed still existing superficial ulceration. The left was entirely gone. *The posterior roofs of the palate were glued on to the posterior wall of the pharynx by a tense cicatricial tissue. The same was the case with the soft palate, which showed several defects. The uvula was mostly destroyed by ulceration.*

The consequence of this destruction and gluing process *was, that with phonation a clearly nasal sound was heard, while a regurgitation of the food through the nose occurred when eating.* Aside from this the patient was well.

2. *The daughter, eighteen years old, infected soon after nursing the ulcerated breasts, suffered as already said with syphilitic affections of the throat, which were properly treated with mercury. In her sixteenth year, fifteen years after a seemingly perfect cure, a relapse of the affection took place. Tophi on the frontal bones and on the tibia, were formed. They were cured, however, by the long-continued use of iodide of potassium; but six months afterwards a lupus-like exanthem showed itself on the left thigh, which is yet present, on account of its obstinate resistance to a mercury treatment.* She married two months ago.

The pharynx showed pretty much the same appearance as in the mother. The tonsils were destroyed; the soft palate and the posterior roof of the palate were glued together, for the most part, on to the posterior wall of the pharynx; besides a semilunar shaped defect of the epiglottis.

3. *The child,* seven years old, by the second husband, had a quite healthy appearance; but four months ago it was taken with a *pustulous exanthema.* I used for it sublimate injections, but obtained not a very quick result. After having used sixteen injections, the equivalent of 1 gr. sublimate, they were not wholly healed, and I ordered iodide of potassium in cod-liver oil, which the patient still uses, without the entire disappearance of the exanthem.

V.—SYPHILITIC AFFECTIONS OF THE LARYNX.

The syphilitic affections of the pharynx are followed by those of the *larynx*, the same being intimately connected, both topographically and anatomically. The disease most met with here is "*syphilitic catarrh.*"

The characteristic symptoms between this and idiopathic catarrh of the larynx, are especially: (1.) *The chronic course;* (2.) *The dark red mucous membrane changing into a livid diffuse color of the mucous membrane;* (3.) *A tendency to early erosions and ulcerations.*

1. *The idiopathic catarrh of the larynx has an acute beginning* and a well-defined course, as in catching cold; and therefore is very often combined with catarrh in the nose, or pharyngitis. The *syphilitic catarrh of the larynx develops itself very slowly*, as do all syphilitic hyperæmiæ and exudations. It very often keeps pace with the development of the maculous syphiloid of the skin.

2. The singular color of the mucous membrane of the larynx, which is dark red changing to livid, is probably the result of the slow course of the disease. As the maculous syphiloid has a singular copper-red color, on account of the modification of the hyperæmic clear-red, produced during the slow progress of the disease by the transudation of the coloring matter of the blood, so the chronic progress of the syphilitic process on the mucous membrane of the larynx, not only gives rise to dilatation of the capillaries, but simultaneously here also, a transudation of the hæmatine occurs and a change in hue. The color of the congested vocal cords in common catarrh is a lighter red, and the dilated capillaries, with their small branches parallel to the free borders of the ligamenta vocalia, can be clearly seen.

But it should never be forgotten here, as in affections of the pharynx, that great caution should be exercised in making diagnosis from colors.

3. As the commencement of syphilitic catarrh generally takes a chronic course, it is the more significant, that so soon as the inflammation has over-reached the climax, the *formation of erosions through mollecular detritus, the peeling off of epithelium*, and *subsequent ulcerations very rapidly occur*,—all of which symptoms come prominently into the foreground. This quick destruction has a strong analogy to the genesis of the *plaques muqueuses* in the pharynx.

As there, so in the larynx, where the papules, variously situated, are swollen by a weak infiltration, and which, in the beginning producing in excess, an already unhealthy, unripe epithelium, quickly break down and give rise to those gray-white, dull, shining patches, resembling places cauterized by *argentum nitricum*. The epithelium, destroyed by detritus, and peeling off from its place, leaves a superficial erosion which, by the manifold mechanical movements, as breathing, talking, &c., induces still deeper destruction of the underlying tissue very easily.

As the whitish-gray patches are mostly situated near the *middle of the vocal cords in the free borders*, more or less scattered, we see, on the other hand, that the deep ulcerations have a predilection for the region of the processus vocalis, the Santorin and arytenoid cartilages.

Another consequence of the syphilitic catarrhal affection of the larynx is, *submucous infiltrations*. The transuded fluid in catarrhal parenchymatous inflammations is never of a serous nature, but seems in syphilis to have a more consistent formation, and thereby produces quill-like elevations of a greater resistance, with seldom well-defined granulations, and also tumors resembling polypus. The natural consequence of these firm swellings are hoarseness, and even aphonia on account of *paralysis of the vocal cords* induced by pressure on the motor nerves. This I shall explain in a following case (No. 33).

But that a permanent *stenosis of the larynx* may be hereby produced, seems to me only possible in exceptional cases. I, myself, have had no occasion to observe it. The condition for such a stenosis of the larynx, which can only exist with the firmer infiltrations, belongs to a very late period—the gummous one—and I cannot agree with Tuerck, who

designates such stenosis as a consequence of an early parenchymatous inflammation.

It is a question of importance whether *condylomatous granulations* can be produced in the larynx, as we had occasion to see them on different parts of the skin and mucous membrane, more or less extensively, and in a more or less altered formation.

"We believe the same (broad condylomes) to be the general cause of early hoarseness in syphilitically affected patients, and also that the accompanying difficulty in deglutition, pain in the throat, &c., arise from the same source."

This is the answer which Professor Gerhardt of Jena and Dr. Roth have given as the result of nine months study and observation, taken conjointly on the syphilitic diseases of the larynx from abundant material.*

"Of fifty-four patients with secondary syphilis, of whom forty-three were in the earlier stages, eight had already broad condylomes in the larynx (15 per cent.) and were, most of them, quite hoarse. Yes, one of us, in another hospital, among three syphilitics, found broad condylomes in two (66⅔ per cent.), of whom one was not even hoarse."

"The distribution of the condylomes in the different places in the larynx, was in the following manner: right vocal cord, five times; left, three times; the folds between the arytenoid cartilages (base of the larynx), four times; anterior commissure, once; aryepiglottic folds, twice."

Concerning the appearance of this so-called broad condylome, it is described as follows: "as broad, flat, quill-shaped elevations;" "red, like the mucous membrane, with the surface studded with fine excrescences;" "of velvety appear-

* Virchow's Archives, vol. xx., p. 482, and vol. xxi., p. 1.

ance;" "flat, whitish drops;" "round, quill-like elevations of the size of a shot;" "protuberances with sharp edges, of the size of a pin-head, and white color." In the ninth case, first chapter, page 12: "There were on both vocal cords, behind the middle, (?) flat, reddish protuberances on the free border, and somewhat over-reaching it. In spite of mercurial treatment, these broad condylomes multiplied themselves so that the greater part of the vocal cords on the inside had a mulberry-like appearance."

This examination, communicated in 1860, upon broad condylomes in the larynx, by Professor Gerhardt and Dr. Roth, *has been believed since then by nearly all the later authors* on syphilis and laryngoscopy. And I wish to explain here that *these views and examinations of the named authors must consist of a real delusion, and particularly is the described formation of the excrescences contrary* to the condylomatous nature. The formation of "flat, whitish drops," "sharp-edged protuberances of the size of a pin-head," &c., will not be found in the papules of the mucous membrane of the larynx. If, really, condylomata lata were to be found in the larynx, they would, like the same on all the other mucous parts exposed to pressure and friction, be only rudimentary, and would very soon ulcerate superficially.

As, furthermore, the condylomes belong to the homogeneous tumors which are produced by hyperplasia of the pre-existing matrix of the papillæ, they can only be found where the maternal soil is, *i. e.* where papillæ are present. This papilla formation is found on the *pavement epithelium*, but not in the regions covered with columnar (flimmer) epithelium, as the surface on the folds of both "arytenoid cartilages," "anterior commissura of the larynx wall," on which places Gerhardt and Roth had found such condylomes.

The pavement epithelium, which extends from the cavity of the mouth towards the larynx, reaches but a few lines above its entrance, to make room for columnar (flimmer) epithelium, consisting of long stretched cells, which are constantly found on the laryngeal surface of the thyroid cartilage, the ventricles of Morgagni. Only a small strip of flattened epithelium descends from the walls of the pharynx through the incisura interarytenoidea and covers the free borders of the vocal cords. Here under this epithelium we find only a few elevated papillæ, as on the points and the outer borders of the thyroid cartilages.

Although the named publications of these two authors appeared eight years ago, and although since that time laryngoscopy has gained ground, immensely and rapidly, and the larynx has been the object of many examinations, yet only *two authors*, according to my knowledge—a very insignificant number—have published any observation harmonizing with the above histological facts. The names of these authors are Vogler and Tuerck.

Dr. Vogler,* in a case at Ems, speaks of whitish, red, pointed drops, like excrescences on the border of both vocal cords, which he explains as condylomatous granulations, without any explanation of his view.

Tuerck in his work, "Clinic of Diseases of the Larynx and Trachea" (p. 414), quotes in several places "mucous papules and granulations which are resembling each other more or less and therefore must be, evidently, of a syphilitic nature, because they exist with symptoms of constitutional syphilis and disappear with any anti-syphilitic treatment."

Of 258 cases published by him we find only seven which really belong here. As the seat of the granulations was in

* German Clinic, 1863, No. 16.

nearest proximity to ulcers, it seems to speak against their syphilitic nature, as it is well known that the here existing so-called papillary granulations can under no consideration be reckoned among the syphilitic broad condylomes. Even Gerhardt is obliged to disavow it, and *says emphatically*, "that in his cases there were *never* ulcerations present," as is the case with granulations of the cellular tissue which Tuerck has already described.

An unbiased and exact analysis of Tuerck's cases shows that those papillary granulations and ulcers, described by him as syphilitic, must have been in many cases of a tuberculous nature, since in several patients death is described as produced by tuberculosis.

What the final result of the mercurial treatment was with the other patients of Tuerck, cannot be at all accurately stated, "on account of the running away of the patient;" another time, "from the non-appearance of the patient;" and a third time, "further report was wanting."

Finally, I have to fall back on *my own observation*. It may be presumed that I paid particular attention, in my patients, to the point in question. I have to affirm that in only three or four patients did I find the small protuberances, which, by only a superficial examination, could easily have been confounded with the mucous membrane papillæ. I never found granulations on the vocal cords which could, in the least, have been regarded as *condylomata lata*. If really 16 per cent. of constitutionally syphilitic patients were hoarse and the cause of this hoarseness was condylomatous granulations of the larynx, as has been the case with Gerhardt's patients, the number of mine so affected would be very many.

I intended to thus dwell at length on the laryngoscopic

discoveries, because they have been, as already said, taken as characteristic, and easily might lead into therapeutical errors. Even Gerhardt and Roth say in their first case (page 7), that only after laryngoscopic examination, "the suspicion of constitutional syphilis" was well founded.

The other consequences of parenchymatous inflammation of the larynx, which occur sometimes in the early period of syphilis—*the ulcers*—have generally a greater difficulty in diagnosis than is usually supposed.

But if, already, the syphilitic ulcers on the genitals show a certain modification concerning their configuration, their color, their secretion, their borders, &c., according to their different seats and singularity of the affected tissue, it seems hazardous to speak about "syphilitic typical ulcers," as has recently been done by certain distinguished German authors. According to my observations, the syphilitic ulcerations of the larynx, having a great line of modification, may be classed in two general groups—*genetic* and *histologic*.

Concerning the *genesis* it is important to bear in mind the fact whether the ulcer originated from a syphilitic catarrhal erosion, or whether from a deeper inflammatory infiltration.

In a *histological point of view*, the ulcers present variously different appearances, according to their locality in the rather narrow cavity of the larynx, which, besides being made up of a very heterogeneous anatomical tissue, as cartilages, muscles, elastic fibres, have two different kinds of mucous membrane, with or without glands. The functional activity of some parts of the larynx modifies the appearances by their mechanical workings.

The catarrhal syphilitic ulcers appear on the vocal cords mostly (showing here only flat ulcerations), and their seemingly deep appearance is produced only by contrast with the

elevation from the swelling of the mucous membrane surrounding. With *deeper inflammatory infiltration* of the mucous membrane, and with ulcers which arise by destruction of such infiltration, the ulcerative process, in its further extension, reaches the underlying elastic tissue of the vocal cord, which is much less yielding to the erosive process. The ragged appearance that the ulcers assume, especially on the free border, somewhat later, is probably caused by the growing out of several soft fibres which are embedded between the elastic fibrillæ, that are less susceptible to ulceration.

When the ulcer has reached the border of the processus vocalis, its advance is less easy on account of the elastic fibrillæ being so compactly arranged with the fibrillated original substance of the reticular cartilage. Hindered from further progress, the ulceration enters so much the more the nearest surroundings of the appendages of the vocal cords, and hereby produces in time, above the organ, a singular semilunar cavity frequently observed.

But after fully destroying these barriers, it may give rise to an entire uncovering of the cartilages, and lastly, necrosis of the same, which even may extend to the posterior part of several rings of the trachea. In the last two years I have had two such cases under my treatment, in which the greater part of the arytenoid and the whole Santorin cartilage of the left side of the larynx were destroyed by necrosis. Tuerck has also published a similar case.

In most cases the stratum thyreo-arytænoideum externum of the suffering vocal cord is destroyed, the muscles of the vocal cord are exposed, and destruction must necessarily follow.

It is different with the ulcers on the false vocal cords,

which are rich in sebaceous follicles and tissues, and allow a gradual progress from the centre to the periphery, and also permit deeper erosions in themselves. The soft and early destroyed tissue, which is abundant here, has a greater aptitude for the ulcerative process.

Very similar histological facts, as connected with these *superior or false vocal cords, we find at that part of the epiglottis which is called petiolus.* Consisting of net-like tissue, adipose in character, and a layer of acinose glands, the syphilitic ulcer can extend in the same manner as on the false vocal cords, giving rise to great loss of substance.

But we find the syphilitic ulcers more on the free *borders of the epiglottis*, than on the petiolus. These erosions seem to have more of a tendency to go deeply, than to remain superficially, and cause defects here, which, according to my observation, take the form of circular segments.

But on no part of the larynx have I seen more significant ulcers, than on the epiglottis. Although I have not observed *perforation* like Tuerck, yet the destruction in many cases was so extensive that *the whole epiglottis was destroyed, only leaving a small residue* appearing as if quilted.

It was singular that the syphilitic process never reached over the insertion upon the tongue. The same I noticed in other ulcerations, especially of a carcinomatous nature.

Notwithstanding the absence of the epiglottis, which is seemingly necessary in deglutition, it is only for a time that fluids and solids occasion any difficulty when swallowing. The neighboring organs induce closure of the glottis, readily accommodating themselves, so that even fluids, without entering the larynx or trachea, could be taken devoid of any hazard. For the physiological explanation of this act, we

are indebted to the interesting observations of Professor Czermak, the inventor of the laryngoscope.

The syphilitic ulcers, as above described, seem to find in their progress toward the root of the tongue, a barrier. On the other hand, we see it extend very easily to the *ligamentum ary-epiglottica* and *plicæ glosso-epiglottica*, and witness destruction frequently on account of contractility produced by cicatrization. It is singular that such ulcers are very seldom situated on the posterior wall of the larynx, where all the most favorable conditions for ulcerative destruction exist.

In phonation, there is the ever opening and closing of the glottis, causing the processus vocalis to be nearer or farther away; the plica inter-arytenoidea, fold-like, is flexed and stretched; and these are the reasons why this region of mucous membrane, covered with numerous glands, is found, in common catarrh, thickened, and in tuberculosis ulcerated. But why syphilis, especially here, causes so much destruction, I most openly confess I could find no explanation.

In the important questions *as to the specific processes occurring in the larynx in the later stages of lues*, the views and observations of Virchow are decisive. This author has not only observed, on the inner surface of the epiglottis, but also in the larynx, "new gummous formations," and asserts that he could plainly trace them in their various stages of development.* But, with these processes, the condylomatous granulations on the mucous membrane cannot be classed, as described by Gerhardt and Roth. I need not further emphasize here, for, according to the testimony of these authors themselves, the appearances were in the primary *stadium* of syphilis. And I think I have shown above, pretty clearly, that such formations do not exist here.

* German Clinic, 1860, No. 48, Malignant Tumors, vol. II., p. 413.

But on the other hand, "the two laryngoscopically observed knotty swellings in the larynx of two syphilitic women,"* might be classed among "gummy knots," and for this reason, since they were complicated with ulcerations of the pharynx and knotty affection of the skin upon the nose, as well as in other regions of the body.

Why Tuerck† should especially designate these two observations of Gerhardt and Roth "as unwarrantable," I really do not know, since he, himself, publishes cases where a want of complications and appearance of the excrescences, has certainly no bearing whatever on their gummy character. He, himself, is forced, by an interrogation set after the expression "gumma," to doubt one of his cases; and, too, it is significant that in the second of his cases, the so-called syphilitic tumor "gave way" to an ordinary treatment.

I had a large number of syphilitic patients under my treatment in whom *circumscribed tumors on the different parts of the larynx were present*, but, that they were, in reality, gummy knots, neither the appearance nor other diagnostic signs would warrant the assertion; yet still, the gummous character of the diffuse infiltration *was very striking*. They were seated on the epiglottis, and on the posterior wall of the larynx, the *chordæ vocales* and false vocal cords. Their color was a dirty yellow-red, and their consistency, as ascertained by digital examination, on the epiglottis and false vocal cords, somewhat elastic. The ulcers either were deeply seated in the tissues or ran along superficially. After healing, the infiltrations remained in an obstinate manner, causing here *stenosis* of the larynx, as I shall further describe.

Differential diagnosis of tertiary ulcers from *scrofulosa*,

* Ch. I., pp. 23, 24. † Ch. I., p. 388.

or *lupus*, is, as every experienced clinicist well knows, very difficult; especially so to distinguish the latter from specific *syphilis*, either in the larynx or pharynx. I found particularly with those patients who have been sent to me from Poland and Russia, *lupous* ulcerations in the above-named organs, which could not be classed among the syphilitic because they appeared in such young persons that there was no possibility of infection, and even the accurate examination of the parents excluded a possibility of a *hereditary taint.*

The distinction of *tuberculous ulcers* is more easy, not only on account of their less characteristic condition, which is apparent to the eye, but also the condition of the lung, which is here decisive. If tuberculosis has already caused deep-seated destruction in the cartilaginous tissue of the larynx, we may be sure that in the softer and more easily broken down parenchyma of the lung, greater destruction, especially *vomicæ*, must be present, and be certainly revealed by auscultation and percussion.

The therapeutics of the *diseases of the larynx*, is divided, as in the *pharynx*, into a *general* and *local one.* As to the former, the lighter processes, consisting of hyperæmia, weak exudations and erosions, heal on an average very quickly and readily, after using by injection $\frac{1}{2}$ gr. or more of the sublimate. For ulcerations already existing, larger doses from $1\frac{1}{2}$ gr. to 2 gr. are necessary. But more rebellious are the so-called tertiary processes, where the already gummous granulations and tumors are formed, or have advanced to ulceration, and where the cartilaginous tissue of the larynx, and the osteoides of the pharynx, are involved. *Iodide of potassium*, as is well understood, has a curative effect and may sometimes be used in these affections.

According to my observations, injections of sublimate are indicated in the following cases:—

1. If iodide of potassium has been used for a certain space of time without any material benefit.

2. If after an apparent cure from the use of iodide of potassium, syphilis reappears, showing its latent disposition.

3. If *periculum in morâ*, or danger of fatal stenosis, appear.

4. If the ulcers are situated on those parts, whose full integrity is absolutely necessary for the normal function of the affected organ, the destruction of which may easily occur, *e. g.* the vocal cords.

The quantity to be used in these cases is quite different—sometimes 2 gr. will be sufficient, and again greater quantities, even up to 5 gr., may be necessary.

But if defects should still remain on the cartilaginous parts of the larynx, or on the bone of the palatum durum, after all other symptoms caused by syphilis have disappeared, it is best not to force a cure by further injections.

To help granulation, a more strengthening treatment is necessary than the *sublimate*, which is hurtful to the protein, since these places are so poorly supplied with vessels, and nutrition is in consequence here materially impaired.

Local therapeutics here is very necessary. With a forced internal or external use of mercury a cure can never be established, but the destructive process will rather be favored. We must concede that *local treatment* plays, very often in these affections, quite an important part. Though superficial erosions sometimes may disappear of themselves, still their cure may be hastened by pencilling with argentum nitricum. This is quite indispensable in ulcerations. Only in cases where either the attending physician, from lack of

dexterity, is unable to use argentum nitricum, or where the seat of the ulcer is difficult to reach, or where finally, the patient shows a great hyperæsthesia against the argentum nitricum, which is very seldom the fact, would I recommend the *atomizer*, either charged with this named caustic in solution, or with the sublimate; of the strength of the former, 5 gr. to 10 gr. to 100 parts of water, or the latter even stronger. The patient must not inspire too deeply, because medication ought to reach the larynx and not the trachea and bronchi. Concerning the *prevalence of the diseases of the larynx* in constitutional syphilis, there were out of 1000 patients, forty-four persons, or $4\frac{1}{4}$ per cent., who were more or less affected with hoarseness, a result quite in contrast with the already mentioned high percentage of Gerhardt and Roth.

The following cases have a double purpose—to serve as paradigma for the different formations in laryngeal disease, and to illustrate the extent and effects of subcutaneous medication.

The first case shows how needful an examination of the larynx is in all persons suffering with syphilis, even when not complaining of pain in that locality.

Case 28.—Clara T., twenty-five years old, of weak constitution and flabby muscles, suffered from her earliest childhood from bone affections, which had their painful seat in both elbow joints, and which are, in consequence of caries, yet very much anchylosed. In her nineteenth year she was infected for the first time, and received in 1863 into our hospital. Being discharged after some time, she returned again in the year 1865. Both times she suffered from vaginal catarrh and pointed condylomes. Treatment both times was a local one.

In the following year and till the end of 1868 she was treated four times for syphilis—the third time for broad condylomes situated on the labia majora. They subsided after treatment for five weeks with the

"sarsaparilla sweat cure." She soon returned to our wards, and there was not only a relapse of the condylomes, but on both tonsils deep ulcerations were found. At the same time there was a knotty syphiloid on several places on the back and left forearm, being only partly ulcerated. After using 1 gr. of sublimate and $\frac{4}{5}$ gr. iodide of mercury hypodermically, restoration was effected.

After repeatedly returning to our hospital with nothing but primary and local symptoms, she was again admitted, March 1st, 1869, for the seventh time. Besides a superficial erosion nothing marked was found on the genitals. But the cicatrices which remained from the already mentioned "knotty syphiloids," showed on their periphery a dirty reddish color, and occasionally small papules of the size of a pea, covered with scales, which gave rise to the suspicion that syphilis was not wholly eradicated from the system, and therefore we searched for something more tangible and local on other organs.

The glands on the different parts of the body were only slightly swollen. Examination of the pharynx revealed a certainly already longer existing defect of the tonsils, and thickening of the roofs of the palate.

Laryngoscopic inspection of the patient, *who complained neither of pain in the throat nor of hoarseness, showed, besides a large swelling of the sebaceous follicles of the root of the tongue, a broad ulcer, four to six lines long, on the free border of the epiglottis, reaching towards the left ligamentum glosso-epiglotticum, and having sharply defined edges, which were surrounded by broad cherry-red borders. On the surface of the ulcers, was a dirty, yellow, firm coating.*

Cod-liver oil with an addition of iodide of potassium and iodine were used; but, as this medication caused but slow progress, subcutaneous injections of sublimate were ordered.

This caused not only a quick cicatrization of the ulcer of the larynx, but also a complete healing of the papulous and squamous exanthemata, so that 3 gr. of sublimate in all were sufficient for a complete cure.

Of a large number of cases of affections of the larynx, I shall only give the following ones, embodying important symptoms:

Case 29.—Otto L., received into the hospital May 16, 1868, and was as follows:

Hard ulcer on the inner fold of the prepuce, erosions on the upper lip and left arcum glosso-palatinum. The cause of an existing hoarseness was from a *swelling of both vocal cords, on which were long gray-white colored patches, parallel to the free border. There was a small loss of substance of the upper third of the left vocal cord, which was quite visible, with the closure of the glottis during phonation. There was a redness and slight swelling of the mucosa, epiglottis, false vocal cords; greater swelling of the left ligamentum glosso-epiglotticum; besides superficial erosions of some of the swelled sebaceous follicles of the tongue. At the same time, gray-white pea-like ulcers could be seen on the soft and hard palate.*

Only after the fourteenth injection, amounting in all to $1\frac{2}{3}$ gr. of sublimate, was a change for the better visible. The restoration advanced with steady progress; so that he was discharged cured at the end of two weeks, after having used $2\frac{1}{2}$ grs. of sublimate.

Case 30.—Anna P., maid-servant, twenty-five years old; from a good family, and healthy constitution; had already been treated, and quite often, with the sarsaparilla sweat cure, for broad condylomes on the labia minora and majora, maculous exanthema, and for superficial ulceration at the corner of the mouth.

She was received again April 2, 1868, into the Charité. She had large *condylomata lata* at the pudenda and around the anus, maculous exanthema, loss of hair, urethritis, purulent vaginal discharge, condylomatous angina tonsillaris, glandular swellings and hoarseness. Laryngoscopic inspection revealed the cause of the hoarseness to be *grayish-white patches on the epithelial covering of the reddened and somewhat swollen vocal cords; also on the false vocal cords and on the arytenoid cartilage similar patches could be seen. On the tongue, around the papillæ circumvallatæ, excrescences of a round, pea-like size were visible. The sebaceous follicles of the root of the tongue were greatly swollen and of a gray-white color.*

I prescribed injections of sublimate. At first the hoarseness increased, and a second examination with the laryngoscope revealed small erosions on the vocal cords, especially at the places where the grayish-white patches were seen. But very soon the treatment was successful; so that, after the hypodermic use of $2\frac{1}{2}$ grs. of sublimate, the laryngeal affections and the other syphilitic appearances disappeared. The glands, however, did not return to their original size.

Case 31.—B., forty-five years old, from healthy parentage and of

robust constitution; large panniculus adiposus; has suffered several years, more or less, with renal calculus, for which he has used, with more or less benefit, the Carlsbad water. During the last treatment he experienced hoarseness and painful deglutition. Professor Botkin, of St. Petersburg, was consulted, and he diagnosed at once syphilis, and sent the patient to me.

I saw the patient the first time in August, 1867, and found, besides the lymphatic glands of the submaxillary region swollen, only a few remaining scales, covered with thickened epidermis on the palms of both hands. Inquiry elicited that infection took place six months previously. Laryngoscopic inspection confirmed the existence of syphilis in the larynx, which was suspected by Professor Botkin. *In the middle of the free border of the epiglottis there was a crescent-shaped loss of substance, besides an ulcer of the size of a bean, deep-seated and situated on the left thyroid cartilage. It seemed to be still developing.* Thick pus covered its base.

We used energetically subcutaneous injections, in doses varying from $\frac{1}{6}$ gr. to $\frac{1}{3}$ gr. of sublimate. After using three grains altogether, there was not only no change for the better, but, on the contrary, the ulcerations had spread further and a violent cough had set in. Professor Virchow was consulted, and he discountenanced the arising suspicion of the tuberculous character of the ulcer; so that the same treatment was continued, and after using $2\frac{1}{2}$ grs. more of the sublimate, entire recovery was effected.

Now, after an elapse of eighteen months, the patient is perfectly well.

Case 32.—Agnes F., twenty-three years old, of delicate and sickly appearance, and emaciated; suffered in her childhood with scrofulosis, especially in the glands of the cervical region, which formed into abscesses, where clear traces of cicatrization are plainly visible.

When twenty-one years old, she was first received into the Charité Hospital, suffering with broad eroded condylomes on the labia majora and minora. The right tonsils were also ulcerated, and on the body there was a maculous and papulous exanthema. After thirteen injections, consisting of $2\frac{1}{2}$ grs. of sublimate, she was discharged cured. In October of the same year a relapse occurred, taking the form of broad condylomes on the labia majora and small impetiginous incrustations in the neighborhood of the glutæi.

She was again discharged, after the further use of $2\frac{1}{4}$ grs., only as seemingly cured. After the expiration of eight months, she was again

compelled to seek relief at the hospital. She suffered not only with broad condylomes this time, but also with throat affections. *On the anterior part of the left palate-roof there was a long, flat and large ulcer, which was covered with a grayish-yellow, firm, adherent coating. Both tonsils were swollen and red. On the right tonsil there were small yellow ulcers, and very similar ones were to be found on the false vocal cords, on the left ligamentum aryepiglotticum, and on the left arytenoid cartilage. Everywhere the ulcerations showed a superficial course, resembling more diphtheritic than syphilitic ulcers.* Notwithstanding the lack of a sure diagnosis, and the emaciated condition of the patient, I used the subcutaneous medication. Hardly were 1½ gr. of the sublimate used before cicatrization of the borders of the ulcers began, and complete healing with 2½ grs. was brought about.

Case 33.—The following case may serve as an example of paralysis of the vocal cords, in consequence of syphilitic infiltration, and a quick restoration to health by the use of sublimate, subcutaneously administered:

F. C., a merchant, of a healthy family and healthy appearance, aged twenty-three; says he never suffered from throat affections, nor syphilitic disease. During the last several years, at intervals, he has been attacked with furunculosis. Further investigation revealed that two months previously the patient contracted gonorrhœa, which was neither lasting nor painful. Other symptoms, which might follow a chancre in the urethra, were not present. His hoarseness dated back for only a fortnight, gradually becoming more intense, dyspnœa existing for the last two days only. When I saw the patient the first time, I was somewhat astonished at the extreme hoarseness and that the respiratory murmur had mixed with it a certain degree of stridor. Examination revealed a maculous syphiloid that was very marked on the trunk, besides swelling of the inguinal, cervical and submaxillary glands. The pharynx, tonsils and palate-roofs were swollen, and the first especially was covered with the already described grayish-white and somewhat elevated *plaques.*

The laryngoscopic examination was very interesting. Aside from the suspicious redness of the larynx, there was an important swelling of the vocal cords, with a diminished ability for movement, as in paralysis. The glottis was of a sharp, triangular shape. In quiet respiration the swollen vocal cords touched themselves on the anterior corner, wholly occluding the pars ligamentosa and the pars cartilaginea, so that a fissure showed itself, about

four or five millimeters in length. In forced inspiration and expiration the opening as well as the approaching of the vocal cords was hardly perceptible. The same immobility was present during intonation, while the false vocal cords very nearly approached each other in the first act of phonation.

These symptoms, together with a marked defluvium capillorum, induced me to base my diagnosis as syphilis, taking the paralysis of the ligamenta vocalia as a consequence of pressure, produced by syphilitic infiltration, upon the motor nerves of the vocal cords. The result of the treatment justified this diagnosis; for after the use of $2\frac{1}{2}$ grs. of sublimate, given subcutaneously, the patient was discharged as cured.

After ten injections, the movements of the vocal cords were more perceptible; but as the redness did not wholly disappear, local remedies were used for it.

The following cases show that with affections of the larynx an energetic treatment is necessary in the beginning, because a loss of substance of the vocal cords may easily occur, inducing an alteration in the voice which cannot be remedied by later administration of strong subcutaneous injections.

Case 34.—K., brewer by trade, twenty years old, of healthy constitution, received into the Charité, June 14, 1868, patient No. 3196, had on the prepuce sharp, circumscribed, hard, superficial erosions, swelling of the inguinal, and especially of the submaxillary glands, and considerable hoarseness. Laryngoscopic inspection revealed an ulcer four to five lines long, very deeply situated, sparingly covered with pus, together with superficial erosions of the right swelled vocal cord. Also the posterior wall of the larynx was swollen, and had a milky hue of epithelial covering. The epiglottis seemed to be thickened, and had on its free borders a few yellow spots which could be distinguished either as fatty follicles, or as a small submucous layer of pus. The swollen false vocal cords showed also similar appearances. Besides this laryngeal condition, the whole body was covered with but a slight maculous syphiloid. Inquiry revealed that infection took place about twelve weeks before, and the syphilitic sclerosis quickly caused phymosis, which had been operated on eight weeks ago.

After the use of 2 gr. of sublimate hypodermically, the epithelial erosions disappeared, and the ulcer on the vocal cords healed, but the

loss of substance, and cicatrization caused thereby, left the hoarseness remaining.

Case 35.—Mrs. V., thirty-six years old, of robust build, but of unhealthy, pale color; was, up to her twenty-fourth year, quite well. Three weeks after marriage she became sore at the genitals, and a little while later wart-like excrescences with well defined edges appeared. It seems also that the patient suffered from broad condylomes. She used iodide of potassium and Russian vapor baths, with seemingly a curative result, but some weakness remained. After eight years a throat affection made its appearance characterized by a hoarseness and pain in deglutition. The same therapeutics were repeated with similar results. After the lapse of three years more, the throat difficulties reappeared, but in a different way, causing complete aphonia. Decoctum Zittmanni, with inunction treatment, was employed. But in a year these symptoms appeared again. Sixty-four bottles of Decoctum Zittmanni were used, but without any very favorable result, as the aphonic voice yet remained. It is mentionable that during these twelve years of married life, she had never given birth to a living child, but on the contrary she had aborted every year, and always in the third month, the last time being one year ago.

November, 1868, the patient commenced treatment with me. *I found on the left tonsil a small ulceration, swelling of the right vocal cord and a very great loss of substance of the left one, reaching from the middle to the processus vocalis.*

I used with the patient the injection treatment. Already, after using but $1\frac{2}{3}$ gr. of sublimate, the swelling of the right vocal cord was lessened and the ulcerations were cicatrized, but the aphonia caused by the contractility of the cicatrice was not very materially altered.

Case 36.—Lieut. S., thirty years old, of healthy constitution and appearance; had always enjoyed good health. January, 1867, he was infected. On the prepuce an ulcer appeared, which was designated by his attending physician as "ulcus molle," and he was treated only locally this first time. But seven weeks later, a throat affection appeared, for which gargarisms were used. The physician in attendance denied the existence of any syphilitic affection.

Shortly afterwards, about nine weeks from the time of the suspicious coitus, a maculous exanthem appeared. Another physician was brought into consultation, who called the exanthem a syphilitic erup-

tion, and detected a yet existing induration on the prepuce. Dzondi's treatment was ordered, and one hundred and eighty pills taken, besides sarsaparilla tea. But the results were not lasting. Painful deglutition and hoarseness appeared again, and the patient used for six weeks decoctum Zittmanni. Even the effects of this were but temporary, and relapse occurred again after three months. Iodide of potassium was prescribed in larger doses, and twenty-five drachms were used. The disease of the pharynx disappeared, but hoarseness remained.

April, 1868, the patient began treatment with me. Both tonsils swollen; the right grown together with the anterior roof of the palate. The velum and posterior wall of the pharynx were very much reddened, and the latter, especially, interspersed with white capillaries. *On the free border of the palatum molle, left from the appendage of the uvula, there was an ulceration of the size of a bean, which was dispersed through all the tissue, encircled by a cherry-red colored border, and covered with a grayish-white pus-like secretion. Similar extensive ulcerations were seated on the anterior border of the left arytenoid cartilage, and on the right vocal cord. On the latter, one ulcer occupied three-fourths of the processus vocalis, of which already a small part was destroyed. In phonation this defect of the glottis was more visible. On the left swelled vocal cord only superficial erosions could be detected.*

Besides swelling of the cervical and submaxillary glands, I could not detect any further complication of syphilis; I instituted a local and subcutaneous treatment, and after the use of only $1\frac{1}{4}$ gr. of sublimate, already all the ulcers of the larynx and pharynx disappeared, and also the *raucedo syphilitica* was mostly gone. Patient thought he was completely cured; caught cold, and the hoarseness increased, as a consequence. Laryngoscopic inspection revealed, this time, *great swelling of both vocal cords, and a new ulceration of the size of a pinhead, above the circumscribed loss of substance on the right appendages of the vocal cords.* We began again to inject the sublimate solution, and it required the further amount of 2 gr. to effect perfect restoration.

But after a complete cure, a raw and somewhat hoarse sound of the voice remained, resulting from the retraction of the cicatrized tissue above the processus vocalis of the right vocal cord, and thus bringing about an insufficient closure of the glottis.

In the following case, the sublimate injection was used with good result, for ulceration in the larynx, but probably

interruption caused the later arising stenosis of the larynx, which produced so much dyspnœa even impending suffocation, that tracheotomy had to be performed.

Case 37.—Mrs. B., thirty-eight years old, mother of a seven years old, healthy child; married about twelve years ago; was taken in December, 1865, with painful deglutition and cough. Two physicians examined her, and declared her to be suffering from tuberculosis. The treatment being of no avail, a third physician was consulted. He declared her disease to be syphilis, and prescribed a mercurial treatment, followed by iodide of potassium. But, as the patient got no better, she was sent to our hospital.

Status præsens March 21, 1868.—Patient is pale and cachectic; examination of the genitals reveals only œdematous swelling of the labia majora and superficial erosions of the swollen mouth of the womb. *Inspection of the phrynx* shows the right arcus palato-pharyngeus to be changed into broad and almost transparent fibres; the left partly grown together with the posterior wall of the pharynx. The place of this growth exhibits a longitudinal ulcer, with papulous granulations in the surroundings. No trace is left of either tonsil. In both pits, where formerly the tonsils were, which are enlarged by the mentioned flexion of the arches, the mucous membrane is covered with superficial erosion. But very little of the uvula is remaining, it now having a conical shape. Above the same there is a scarred centre from which fibrous stripes radiate.

Rhinoscopic examination is only partly admissible, and reveals superficial ulcerations of the posterior part of the soft palate, and a swelling of the mucous membrane, reaching high up into the cavum pharyngo-nasale.

The papillæ circumvallatæ of the tongue are small and very difficult to distinguish. In examining with the finger around the root of the tongue, we find an atrophy of the sebaceous glands, producing here a singular smoothness. In passing the finger further along, we feel in place of the epiglottis a very hard, narrow and last-shaped excrescence.

Laryngoscopic inspection revealed a very great defect of the epiglottis, of which there remained only the mentioned last-shaped excrescence. The ligamentum glosso-epiglotticum medium is very much thickened. The foveæ glosso-epiglotticae are, on account of the deficiency of the sebaceous glands and flexions of the named ligaments very large. The ligamenta aryepiglottica are,

like the false vocal cords very large and swollen, and show on their yellow-red surface long and shallow ulcers. The vocal cords are of the same color, and also are infiltrated, besides being grown together at their lower point of attachment, so that in phonation and deep inspiration no movement is visible. The yet open space of the glottis is oval-shaped, hardly five to six millimetres long, and about one and a half or two millimetres broad. Through the opening of the glottis quill-shaped formations are visible, but are not easily seen.

The patient complains of great pain during deglutition and respiration. The latter is performed with a certain *stridor*. The sound of the voice is hoarse.

Subcutaneous injections were ordered in doses of $\frac{1}{8}$ gr. of sublimate *pro die*. The treatment was somewhat interrupted on account of threatened salivation. After using 2 gr. of this, the described ulcerations of the pharynx and larynx were completely gone, but the mentioned thickening and infiltration were but slightly reduced. With the further use of $\frac{1}{2}$ gr. more of sublimate, the swelling of the larynx subsided but little, yet the stridor in breathing was gone. By urgent request of the husband, she left the hospital in April, 1868. Two months afterwards, she gave birth to a healthy and yet living child, and was taken four months later with considerable menorrhagia. In October, of the same year, difficulty of respiration increased so much that tracheotomy had to be performed.

The patient is now under my treatment, and my experiments to enlarge the stenosed opening by catheterization has not yet been crowned with success.

In the following case, deep seated ulcerations in the larynx and pharynx, and ulcerative skin affections began to develop themselves. The patient was very weak, but nevertheless we used quite large doses of sublimate subcutaneously, which quickly effected a complete restoration.

Case 38.—Charlotte L., forty years old, was received on February 28th, into the Charité Hospital. The patient was very much emaciated, weak and of a very cachectic appearance. She was married fifteen years ago; has had several miscarriages, only one child being born alive, which died in its twenty-first month, with convulsions. She further says she has always been well up to four months ago and always been

well nourished. Then she first complained of pain in her throat, which made deglutition almost impossible. Very shortly afterwards, and "almost suddenly" spots appeared on the skin, with scaly formations. She used for her complaints "gargarism" and internal medication, which latter seems to have been iodide of potassium.

In examination we found small superficial ulcerations on the posterior commisura of the vagina. On the head, in the region of the right axilla and upper and lower extremities, there were ulcers which reached deeply into the cuticle, and were covered by ecthymatous and rupia-like crusts.

In the pharynx we found quite deep ulcerations on the tonsils, the arches and root of the tongue in the vicinity of the ligamentum glosso-epiglotticum dextrum. The latter showed an infiltrated base, and was partly covered with a dirty looking pus. Laryngoscopic inspection revealed an important thickening of the epiglottis, whose left free border showed a semilunar deficit in consequence of an ulcer seated there. The lig. aryepiglottica were thickened. On the left thyroid cartilage a deep ulcer was present, the size of a bean, and covered with a grayish-white pus.

On the left patella we found a diffused reddened place, painful to the touch.

The treatment of this intricate case consisted of baths, to which bran was added; the subcutaneous injections of sublimate in doses from $\frac{1}{8}$ gr. to $\frac{1}{4}$ gr., besides a good meat diet, and the liberal use of wine.

With the treatment gradual recovery followed. After the use of $1\frac{1}{2}$ gr. the affections of the pharynx and larynx disappeared, and also a portion of the skin syphiloids. Complete cure of them was only effected after injecting a total of 3 gr. sublimate within four weeks.

In the next case, which had used for the manifold and severe syphilitic affection almost every treatment, a seemingly gummous infiltration of the vocal cords, which were partly ulcerated, was found. At the same time the subjective as well as the objective signs exhibited a tendency to perichondritis.

Case 39.—Agnes P., eighteen years old, of pale, anæmic appearance, and flabby muscles, had been, notwithstanding her age, seven times in the Charité for syphilis. The first time she suffered with a blennorrhæic

and primary affection; the sixth time with broad condylomes and large ulcers on the tonsils, together with a papulous exanthem, for which she used a sarsaparilla sweat cure, followed with iodide of potassium. Four months after her discharge and seeming restoration, she again returned to the hospital, having deep ulcers on the palate-roofs and uvula. Again sarsaparilla and iodide of potassium were used, and seemed to effect a cure. But on the 6th May, 1866, she came back once more with the following *status præsens:*

On the right palate-roof there was an ulcer of the size of a penny, with sharp edges, deep base, a dirty-diphtheritic coating, and infiltrated surroundings. A second ulcer of a lesser size and same consistency, was situated on the posterior wall of the pharynx.

On the mucous membrane of the septum narium, there was a deep seated perforating ulcer, with swelling in the vicinity.

On the lower border of the nasal opening, were also ulcers of the same character and quill-like elevations of the size of a bean, red color, and a third of an inch long, whose inside borders were also ulcerated.

The lymphatic glands of the submaxillary and cervical regions were largely, while those of the inguinal region were but slightly swelled.

Subcutaneous injections were ordered, and twenty-nine doses administered,—seventeen with nearly $\frac{3}{16}$ gr., and twelve with $\frac{1}{8}$ gr. per dose,—so that altogether $4\frac{1}{8}$ gr. were used.

We noticed that after the seventeenth injection, the ulcerations on the posterior wall of the pharynx were completely gone. After the twenty-second injection, the ulcers on the nose and palate-roofs were all perfectly cicatrized. But the quilt-like formations were not gone till after the twenty-fifth was administered, or the use of about $3\frac{1}{2}$ gr. Slight ptyalismus occurring, an interruption in the hypodermic medication of four days was necessary at the twenty-fifth injection.

On the 8th of June, 1866, the patient was discharged, *cured.*

After an elapse of six months, Agnes P. came again, for the ninth time, into our ward with a light pigment-colored exanthem, and small isolated *knots of the size of a pea, on the nose and upper lips. They were particularly on the point of the nose and borders of the nostrils. They were already deeply seated in the cuticle, ulcerated and covered with a yellow coating.*

Scars on the septum narium and contraction produced by cicatrized ulcers, flattened the nose somewhat, especially at the point, and lessened the openings. Patient said she had pus-producing pimples on her nose three months ago, which she opened herself, and applied to them "red

precipitate" till salivation commenced. At the same time she used some sort of a laxative decoction.

We prescribed iodide of potassium in 16 gr. doses. After using this remedy four weeks, the ulcers were healed and cicatrized, and the patient feeling *quite* well, was discharged as cured.

After eighteen months she returned again, in April, 1868—*aphonic*, but apparently healthy.

Laryngoscopic examination revealed that the vocal cords were round, pale and swollen to such a degree that the glottis was narrowed in consequence. They were deeply ulcerated in the vicinity of the left processus vocalis.

On the right arytenoid cartilage we could see a large swelling and redness of the mucous membrane. On the lower part of the left vocal cord, a small flat quilted prominence appeared, partially covered with an ulcer. The right vocal cord stood with its free border nearly in the medium line, and remained stationary here during attempted phonation, and also with forced inspiration and expiration. The movement of the right vocal cord which plainly appeared with coughing, prevented a greater stenosis of the larynx. Deeper inspirations were attended with a rough stridor.

The complaints of the patient were referred to deglutition and coughing, especially on the right side of the larynx which seemed painful to the touch. Cataplasms and inunction with gray salve over the larynx, and $\frac{3}{8}$ gr. doses of sublimate subcutaneously injected, were ordered. Salivation being feared, we paused in the treatment two days, and afterwards used only from $\frac{1}{8}$ gr. to $\frac{1}{4}$ gr. After using 3 gr. altogether, the ulcers on the larynx healed, and the infiltration of the vocal cords and the quilted formations on the left chorda-vocalis disappeared. Subcutaneous injections were further used which effected a perfect cure.

Lastly, I wish to direct the attention of my readers to those cases of stenosis of the larynx which have had a long existence, and in which by a deficient æration, a blood alteration, or almost blood poisoning is caused. Here *tracheotomy* ought to be resorted to when impending suffocation occurs, as the following case will show.

Case 40.—I was consulted by N., an army officer in 1862. He was scarcely able to ascend the stairs on account of dyspnœa. The difficulty in respiration was so much that he could utter only half sentences,

and being also interrupted by a persistent cough. He contracted a hard ulcer in 1856, and mercurial pills were prescribed, he faithfully carrying out the physician's prescriptions. In the fall of 1860, he noticed for the first time, a hoarseness, which, together with pain in deglutition, increased in severity—later dyspnœa occurred, and as time advanced, it became greatly augmented; countenance rather livid; the pulse much flexed and small; and cough very frequent with a hoarse dry sound.

Laryngoscopic examination revealed a stenosis of the larynx. The infiltrated vocal cords, covered with a superficial ulceration, were but little moved in inspiration—back of them red quilt-like formations appeared.

Examination of the chest revealed only "rales" and a slight dullness on the right front of the lung. I thought *tracheotomy* indicated, and fixed the next day to operate. But when I made my visit the following day, I found the patient already dead. Only ten minutes before, he had drank beer brought to him by his landlord. Section revealed great stenosis of the larynx. The sides of the laryngeal cavity, behind the vocal cords, were swollen in such a manner that only a fissure remained, and this was still more narrowed by the thickened mucous membranes of the posterior wall of the larynx. The vocal cords were infiltrated and showed superficial loss of substance.

Similar cases in suffocation occurring after a longer existing stenosis of the larynx are reported by Green (American Jour. Med. Sciences, 1851); by Pravaz, (Lebert Traité d'anatom. tom. I.); Tourdes, (Gaz. des Hosp., 1853, No. 12); Senn, (Jour. des Science Med., tom. V., p. 230), &c.

VI. SYPHILITIC SKIN AFFECTIONS.

MACULOUS EXANTHEM.

Before commencing upon the therapeutics of the *diseases of the skin*, occurring in the first period of syphilis—that extended territorium in which the dyscrasia of blood establishes disturbances of nutrition from a simple hypeæmia,

as patches and erythema, up to the deeper gummous ulcerations—I shall, irrespective of those cases in which the exanthemata are only companions of other syphilitic affections, and therefore to be classed under general therapeutics, place the following principles the first in order.

If the exanthemata show only slight redness, if they do not possess a specific character, if there are wanting these singular polymorphous skin efflorescences only seen in syphilis, and especially if they have no explainable connection of the lower formations to the higher ones, I always treat such cases, at first, in the *expectant method.*

But if this is impracticable and energetic treatment seems to be needed, then I inject, by way of trial, small doses of sublimate. If they are well borne and show good result, I even use for the entire curing of the exanthem further injections till I have used at least $2\frac{1}{2}$ gr. of the sublimate. But if no results are apparent then I lay aside the subcutaneous medication.

The diagnosis of a *maculous syphiloid* in its earliest commencement, cannot be devoid of more or less difficulty, particularly if the characteristic coloring is absent, and the hyperæmic redness of the patches in contrast to the paler hue does not appear. Even exposure of the body and the coldness thereby produced, will often fail to bring out this contrast in color.

In such cases, of diagnostic value are *the complications with other syphilitic symptoms,* which occur at this period of syphilis—as the connection of the mucosa of the pharynx, the defluvium capillorum, and the swelling of the lymphatic glands. But the first two symptoms are very inconstant, and the third symptom is difficult to estimate on account

of not knowing the normal size and consistence of the glands, and hence the three are often almost valueless.

A *non-syphilitic roseola is a rarity.* Roseola patches occurring with exanthematous diseases, as morbilli, scarlatina, typhus, have all characteristic differences, and besides are accompanied with concomitant, febrile, catarrhal or anginous appearances, which are in strong contrast with developing syphiloids. *Roseola balsamica*, which is formed somewhat similarly to the syphilitic, is generally combined with hyperæsthesia of the nerves of the skin, and it disappears as quietly and suddenly as it appears. *Substantive roseola* is a morbillous or scarlatinous process which almost in its incipiency begins to disappear and cannot be confounded with *roseola syphilitica.*

I have very often noticed that on the inside of the upper thigh, the first signs of syphilitic eruption appeared, and here showed the characteristic pale, copper-red color, produced by the change in the haematine of the blood, but without developing itself afterwards to a clear *roseola elevata.*

The *therapeutic effect of the subcutaneously injected sublimate on the maculous syphiloid* is generally a very satisfactory and quick one, and compares very favorably with the success of other standard treatments. According to Zeissl (p. 103), "erythematous syphiloid disappears with a mercurial treatment in a fortnight." Engelsted* puts the average time for treating the same complaint at four and a half weeks; the shortest period three weeks, and the longest six weeks. The chief remedies for these skin affections are, according to Engelsted, calomel and sublimate, either alone,

* Constitutional Syphilis. Translated by C. Uterhart, Wurzburg, 1861, p. 10.

or combined with iodide of potassium and decoctum sarsaparillæ.

In the cases treated by me the amount, for complete eradication, was from $1\frac{1}{3}$ gr. to $1\frac{5}{8}$ gr. of sublimate.

That there are exceptional cases where *larger doses*, and a *longer time*, are necessary, I will not dispute. But never was it necessary to use large doses for such a length of time as I have mentioned, with the use of the decoctum sarsaparillæ compositum, or as Engelsted notes for several of his patients.

Those patients which came under my care in a relapsing stage of syphilis, already having *erythema annulatum*, required larger doses. These cases had generally very bad result on account of the syphilitic sequela always coming at a certain period. In some cases the patches became redder instead of paler after the first injections, and even more elevated, but by steadily continuing the medication the eruption disappears in due time. This is the case with all anti-syphilitic treatments, either botanic or mercurial. According to Zeissl, "all anti-syphilitic treatments caused an increase in the development of the elementary formation of syphilitic efflorescence."

Lastly, I wish to direct the attention of the reader to a new species of *non-syphilitic maculous exanthema*, which, according to my knowledge, has not yet been described, and to which I have been partly directed by Staff Surgeon Dr. Lommer. The same manifests itself by a quantity of large "pea-sized" spots, of a peculiar pale blue color, which, for this reason, we have named *exanthema cœruleum*. This color is very dissimilar to the "*mulberry rash*" of the large flecked syphiloid, unlike the ordinary copper-red hue, and very different from the gray lead color of pigment spots.

Although we noticed this bluish maculous exanthem at first only with syphilitics, later observations revealed that quite as often it occurred with the non-infected, and that it appears without a syphilitic blood-dyscrasia pre-existing.

As to the *genesis* of this singular exanthem, which I have mostly observed on the sides of the chest, I can give only this explanation, that I think it is produced by a venous conglomeration and the blue pale color is caused by an overlying adipose covering.

PAPULOUS EXANTHEMA.

Diagnosis of the *papulous syphiloid* is, only in a few cases, difficult. As with the maculous syphiloid, it is difficult only *in the incipiency of its formation, namely, when the dirty brown red color, caused by the lenticular character of the syphilis, has not yet appeared. And further, efflorescences are present only in a few species.*

In the obscure cases all the other data and symptoms must be considered, in order to make out the diagnosis; as the concomitant symptoms, *the date* of the infection and *locality of the papules*, &c. It is of importance to find out whether they are seated in their favorite places, as in the bend of the extremities, especially the plica cubitalis, fossa poplitea, and near the hair on the forehead, neck, chin, &c.

The *miliary species* of this syphiloid is easily diagnosed. They show their syphilitic character early, by a regressive and progressive metamorphosis. Sometimes, however, the diagnosis is embarrassed, inasmuch as often with the rapidly appearing eruption of the small papules, *febrile* and *nervous* appearances occur, which are generally absent in syphilitic exanthemata,—the febrile first showing itself with a higher

temperature and accelerated pulse, while the nervous is attended with more or less itching of the skin in the affected regions. In consequence of this *pruritus*, the small papules are very often scratched open by the patient, so that the efflorescences are subsequently covered with bluish-black crusts.

The *lenticular species* progresses more slowly. Only after a lapse of time, are a part of the efflorescences flattened, desquamated and covered with their scabs. The more conical and pointed papules take on the vesiculous and pustulous formations.

More difficult is the diagnosis in those cases in which the papulous exanthema occur, and which is the only symptom of relapsing syphilis. Here is a tendency for the efflorescences to group themselves in certain configurations, as in an irregular, coil-like formation, or in a crescentic shape. This occurring, forms a good basis for diagnosis.

With few exceptions have I noticed in recent cases of papulous syphiloid, fine, circular formations only four or five lines in diameter, which appear on the face and neck. They consist of small narrow papules of the size of a pin's head, covering themselves quickly with pale red scales of nearly the same dimensions. But care must be taken not to confound such formations with a similar species of the *herpes circinatus*.

Concerning the therapeutics, subcutaneously, of both described species, I commence and conduct the treatment in accordance with the above-described principle. When the diagnosis is so uncertain that even an experienced syphilographer would be in doubt, I inject then only *small* quantities of sublimate by way of trial.

But I use the injection continuously, even after the pap-

ules show a tendency to desquamate and when they are covered with fine lamellæ, peeled off from the epithelial scales, also even when some small papules increase in volume.

It requires only a few days longer, and the treatment with the sublimate will show its beneficial result on the papulous efflorescences, they getting paler very quickly, being soon after perfectly healed.

The healing of the *papulous syphiloids* require on an average from $\frac{1}{3}$ gr. to $\frac{1}{2}$ gr. more than the *maculous*. But in some patients even greater doses are necessary.

The resistance to treatment of the named exanthema, in certain cases, is known to all syphilographs. In former years, when I relied more on the sarsaparilla sweat cure, I met cases where, after months even, the papules were in full bloom, and where a repetition of the treatment, in combination with iodide of potassium, effected no curative result. Similar experience I have sometimes had with the inunction cure, which was energetically applied, but without result. And, indeed, it is surprising to witness the relatively quick healing of this obstinate exanthema by the use of subcutaneous injections; *and we need not be satisfied with* $\frac{1}{8}$ *gr. doses pro die, but may even risk larger quantities, as for instance,* $\frac{1}{4}$ *gr. or* $\frac{1}{3}$ *gr. pro die.*

In the following cases I shall show that while in some patients neither a mercurial, nor the sarsaparilla sweat cure treatment, energetically used, was sufficient to destroy the papulous exanthem, and that finally subcutaneous injection produced complete restoration.

Case 41.—Anna B., eighteen years old, was received August 22d, 1866. Examination revealed a soft ulcer in the fossa naviculare vaginæ, vaginal discharge, urethritis and erosions on the clitoris. Although the

erosions had a suspicious "look," yet no sure grounds for diagnosis of syphilis could be detected, so I tried at first a local treatment only. After four weeks syphilis manifested itself in the form of a *maculous exanthema*, accompanied *with pale red papules of the size of a pea situated on the forehead, back and forearm. A large efflorescence had developed itself on the upper lip and between the left nostril and angle of the mouth.* On the latter a condylomatous erosion was situated. The lymphatic glands in the left inguinal region were swollen and painful to the touch. We prescribed the sarsaparilla sweat cure. After using it for seven weeks a number of desquamating papules still remained. On this account we used the subcutaneous medication, and after a lapse of eight days, six injections of $\frac{1}{5}$ gr. each, of sublimate, produced perfect recovery.

Case 42.—Louisa M., twenty-one years old, of healthy constitution, but pale complexion, had already, June, 1866, on account of papulous exanthema, undergone a sarsaparilla sweat cure of six weeks duration. Three months afterwards the same appeared again, and similar treatment was instituted.

Returning for the third time, April 20th, 1867, into the Charité, the peculiar condition of the gums and breath aroused my suspicion that she had taken mercury. By inquiry she owned that she had undergone Dzondi's cure and had taken about 150 pills.

Status præsens: Small erosions on the vaginal opening; the vaginal portion of the uterus much swollen, especially the posterior part of the *os*, which was hard and superficially eroded. Tonsils largely swelled and much reddened. In the neighborhood of the glutei there were crusts resembling impetigo. On the body there were *numerous papules, particularly on the back, posterior surface of the arms, forehead and neck. Here they were aggregated into the form of half circles, one and a half inches in diameter. The single efflorescences had the circumference of a lentil up to the size of a pea, being of a dirty brown hue and destitute of scales. The papules were rather indurated. On the head there was occasionally a small crust.* Of the lymphatic glands, the cervical and right axillary and cubital were very hard and greatly swollen.

To prevent further salivation we gave the patient chlorate of potassa as a gargarism and internally. After all symptoms of ptyalism had disappeared we began the use of hypodermic injections. After the sixth injection of $\frac{1}{6}$ gr. of sublimate each, the vaginal erosions were already gone. Here we had to suspend the subcutaneous treatment on account of symptoms of ptyalism, but resumed it after the lapse of four days,

giving $\frac{1}{8}$ gr. pro die. *The papules became more flat and some began to desquamate. After the use hypodermically of* $1\frac{1}{2}$ *gr. more, the healing of the papules was complete, and only small spots of a pale brown-red color remained.* The disappearance of the glandular swelling had not taken place in the same proportion.

Case 43.—Augusta Schn., thirty-eight years old, received into the Charité June 27th, 1866.

Patient says her present disease was discovered only some six weeks ago, for which she had taken twelve sublimate pills and two bottles of medicine, the ingredients of which she was ignorant.

Status præsens: On the right labium maj. there was an ulcer of the size of a Mexican dollar, with an indurated base, covered with a fatty pus-like secretion. On the left labium min. there was an ulceration of less extension but of the same character. Pale brown scabs were visible on the right nostril. The skin of the whole body, especially on the back, chest and abdomen, *was thickly covered with a maculous exanthem, irregularly scattered about. Some were topped with small scales, others were metamorphosed into diminutive papules.* On both tonsils and on the sebaceous glands at the root of the tongue, gray-white condylomatous erosions could be seen. The lymphatic glands were much swollen in the inguinal region, but only moderately in the submaxillary.

The patient was treated at her own request with the "*sarsaparilla sweat cure.*" During the same, the maculæ became more reddened, although some of the spots got paler and still others lead-colored. *To our surprise, a lenticular papulous exanthem developed itself on the back and upper arm.*

After four weeks of the above treatment we suspended the same on account of increasing weakness and a tendency to vomiting. After a pause of *eight days we observed an important increase of the papulous syphiloid;* besides, we detected that the ulcerations at the labia majora were not much softer, and therefore we determined to try the hypodermic medication.

On account of the extreme debility of the patient, we injected only $\frac{1}{12}$ gr. doses of sublimate, and soon increased to $\frac{1}{8}$ gr., and then $\frac{1}{6}$ gr. After using but 1 gr. the ulcers were cicatrized over and their hardness very much diminished.

The papules, which were already considerably reduced when $\frac{3}{4}$ *gr. had been used, were entirely gone when* 1 *gr. had been administered, without leaving the*

usual pigment colored spots. But to eradicate the remainder of the induration, a further quantity, to the amount of 2¼ grs. altogether, was necessary.

SQUAMOUS EXANTHEM.

This *squamous syphiloid* is mostly developed by cellular proliferation from the papules, and on this account we find, besides papules covered with scales, many which have not yet taken on this metamorphosis, and hence diagnosis is more easily made.

Besides this *characteristic polymorphie* of the efflorescences, this syphiloid is always preceded by, or simultaneously attended with, syphilitic processes in other organs.

The *epidermic scabs* in squamous syphiloid are disintegrated generally from the thicker scabs, as we see them sometimes in genuine psoriasis, by being very thin, yellow, red or shiny white, and appearing as if varnished. Their seat is mostly in the centre of the papules, and seldom in the periphery, having a *wreath-like formation.*

In some cases the character of the squamous syphiloid is somewhat clouded—as, for instance, when the epidermic scabs are not seated on the papule, but directly on the adjacent reddened cuticle, as it occurs in relapses after our subcutaneous treatment. The scabs then are thicker and cement-like, resembling psoriasis vulgaris in appearance. The difficulty in diagnosis, under the circumstances, is much lessened, when the locality and configuration of the papules are considered. The *size* of papules varies between the bulk of a lentil and size of a pea, seldom getting larger. But, by confluence of the small efflorescences, *greater formations* may be developed.

The scales of the genuine psoriasis, in opposition to the

syphiloid, very seldom remain in their primary smallness (psoriasis punctata), but gradually acquire the size of a penny (psoriasis numularis), soon assuming, by a central drying process of the scabs, a circle-like formation (psoriasis annulata). As characteristic of the squamous syphiloid, as well as of all syphiloids, is *polymorphie—i. e.*, a simultaneous appearance of *more than one species* of efflorescences, while the genuine psoriasis has a tendency to variations in the *formations of the same* efflorescence.

Among the syphiloids, the squamous shows the greatest inclination for those regions for which the already named papulous evince a *predilection.* The skin of the head is one of these regions, and this valuable diagnostic singularit predominates here, viz.: that generally the *scabs* change themselves very easily into crusts, situated on ulcerated bases; but with psoriasis on the parts of the head covere with hair, *crusts* do not form, but commonly only thin *dirty white* gray scabs, and in such an abundance that they strikingly remind us of the picture of the "Tinea furfuracea" of the older authors.*

I used likewise for the *squamous* syphiloid subcutaneous injections, without any local treatment, as in the two already described formations, with a generally curative result. In only exceptional cases, when the exanthem was situated on the face, neck or hands, did I use inunction, and then with compounds of oleum cadini with hydrargyrum chloratum mite, having a good result.

As is well known, the squamous syphiloid, and especially

* Tinea furfuracea, or Weichselzopf, is a disease met very frequently in Poland, being caused by uncleanliness, and destroying the hair entirely, leaving nothing but a mass of scab. In very rare cases the scabs thicken, making a crust two inches thick.—Translator's Rem.

that which is called psoriasis palmaris and plantaris, is the most obstinate, always resisting the older anti-syphilitic therapeutics; but I can assure you that with the subcutaneous injection, all formations improved gradually, healing being the result in almost every case.

I have to add here that I do not, like many syphilographs, hold the opinion that psoriasis palmaris and plantaris indicate a *quick* removal, and therefore immediate and energetic treatment. On the contrary, I have learned by my observations, that both of these affections may exist a number of years, without evincing that the syphiloid is nourished by any infection in the blood.

I allow myself to give the following two interesting cases, illustrative of my above remarks:

Case 44.—Carl S., tailor, twenty-six years old; received into the Charité December 7, 1867. The recollection of this unreliable patient failed to give us any sure data. He was of healthy constitution, but of pale appearance. *Status præsens:* On the skin of the penis and scrotum and around the anus are broad condylomes; on the prepuce an inflammatory phymosis is discernible. The whole surface of the body is covered with an exanthem, which has a *maculous*, *papulous* and *squamous character*. The exanthem has reached such an extension that only on the thorax are there small spaces free from it, the remainder of the skin having a spotted appearance. The face is especially noticeable, being thickly flecked with papulous efflorescences. In both ears otorrhoea is present. On the left nostril are several large, moist papulous efflorescences, almost like broad condylomes; on the mucous membrane of the nose, erosions; on the left angle of the mouth, small ulcerations; and on the anterior roof of the palate, condylomatous ulcerations. On the inside of the hand the syphiloid has the appearance of psoriasis. There is defluvium capillorum to a slight degree, and the right inguinal glands are swollen to the size of a hazelnut, while the left are as large as a walnut and very hard. The occipital, cervical and axillary glands are swollen, but the cubital are intact.

We ordered the injection treatment, which, after being used twenty

days, resulted in a cure. We began with $\frac{1}{5}$ gr. doses. After using $1\frac{1}{5}$ gr.—*i. e.*, after the sixth injection—the condylomes had only slight elevations remaining, a portion of the papules were healed and the scabs on the face had disappeared, with the exception of the few on the nostril. The psoriasis of both hands was already gone at the fifth injection. After the twelfth injection—*i. e.*, when $2\frac{1}{5}$ grs. of sublimate had been used—the broad condylomes were entirely gone; and so also the exanthem, there only remaining a few pigment spots of a brown coffee color on the nose and chin. After using $\frac{2}{5}$ gr. more, all the other affections were destroyed. So that with fourteen injections, making a total of $2\frac{4}{5}$ grs. of sublimate, the patient was discharged completely cured. The patient for only a few days had a slight stomatitis.

Case 45.—Albert G., joiner by trade, thirty years old, was received February 22, 1866, into the Charité. The patient says that about six months ago he indulged for the last time in coitus, but some time subsequently he noticed his present disease.

Status præsens: A partially eroded and partially ulcerated sclerosis on the prepuce, nearly transformed into a cartilaginous ring, producing such pressure on the glands that several ulcers are the result. *Around the anus and on the skin of the thorax and back there is an exanthem of a papulous-squamous character.* There is light defluvium, and from both ears a serous, pus-like secretion flows, and, according to the patient, only during the last two days. He complains of a deafness, particularly in the right ear, which had existed for the last two weeks. The lymphatic glands in the inguinal and cubital regions are as large as a walnut, while the cervical glands are less in size.

The patient first took a sarsaparilla sweat-cure. After using it six weeks, and there being no material benefit following it, subcutaneous injections were given, in the strength of $\frac{1}{8}$ gr. per dose. The total of $2\frac{1}{2}$ grs. of sublimate, given in seventeen injections, was sufficient to establish a cure in three weeks. After the tenth injection ($1\frac{1}{4}$ gr. sublimate being used), the sclerosis of the prepuce subsided, the phymosis having been previously operated upon. The deafness was also much improved. After the eleventh injection ($1\frac{3}{8}$ gr. sublimate having been used), the papulous efflorescences and a part of the squamous were gone; and after the last injection, they altogether vanished.

CONDYLOMATOUS EXANTHEMA.

Closely connected with the *papulous* exanthem is a syphiloid, which in the first phase of its existence, stands on the same histological basis as the lenticular species, but very soon it oversteps the boundary and develops so rapidly that penny and dollar sized efflorescences are formed, which later resemble the broad condylomes on the genitals, and remind one of their typical elementary formation, and therefore we name it *condylomatous exanthema*. Having reached this state of development, the efflorescences remain, only exceptionally, in an aggregated state, but they undergo a further metamorphosis. Like all the products originated by syphilis, they break down either *spontaneously* on their surface into fatty, dirty, mush-like detritus, or change into dirty, brown crusts, especially when the outward circumstances hasten the molecular destruction.

I have observed in two individuals a further development of syphilis in which ulcerations of the size of a walnut were formed, they being partly destroyed in the above described manner on their surface; and partly having a glandular appearance, resembling, in consequence, monstrous warts.

Among the records of five hundred patients published in my former work, I find that this *condylomatous* exanthem occurred with eleven patients.

6 times with	. . . . .	356 women
5 "	. . . . .	144 "

Concerning the *statistics* of accompanying symptoms *in women*, it was present with

Affection on the genitals:

Condylomata lata,	. . . .	5 times = 1.4 per cent.
Erosions,	. . . .	1 " = 0.69 "

Affection of the skin:

Exanth. maculosum, . . .	1 time	= 0.69	per cent.
" maculo-papulosum, . .	1 "	"	"
" squamosum, . . .	1 "	"	"
" maculo-pap-squam, . .	1 "	"	"
" papulo-squamosum, . .	1 "	"	"
" papulo-impetiginosum, .	1 "	"	"

Affection of the fauces:

In all cases of condylomatous granulations, and mostly on the tonsils.

WITH MEN.

Affection on genitals:			
Ulcus durum, ...	2 times	= 1.38	per cent.
Erosis dura, ...	1 "	0.69	"
Extensive condylomes, . . .	2 "	1.38	"
Affections on the skin:			
Exanth. maculosum, . . .	1 time	= 0.69	"
" " with purpura,	1 "	"	"
" papulo-squamoso-lupos. .	1 "	"	"
" impetiginosum, . . .	1 "	"	"
" papulo-pustulosum, . .	1 "	"	"
Affection of the fauces:			
Broad condylomes with tonsils, .	2 times	= 1.38	"

The quantity of sublimate necessary for a cure was, on an average, 2½ grains.

To illustrate the different formations of the exanthemata and the efficacy of my treatment, the following cases are selected, of which the second is interesting, on account of the already mentioned large tumors of a condylomatous character, which were formed in such magnitude as I have never elsewhere seen nor found mentioned in medical literature. At the same time the case is an evidence of the assertion made that even with inebriates subcutaneous medication is not contra-indicated.

Case 46.—John R., coachman, thirty-eight years old, received into the Charité Hospital July 9, 1866. The patient had contracted a hard ulcer on the prepuce in 1865, and was treated for the same with the sarsaparilla sweat cure, in our hospital. The result was not very lasting, for a short time afterwards, he had a relapse of the ulcer.

He returned into our hospital, July 9, 1866, with the following *status præsens:* On the folds of the thighs are quilt-like elevations $\frac{1}{3}$ of a line in height and same in width, in the shape of a horseshoe, consisting of confluent condylomatous granulations, covered on the surface with a fatty mush-like secretion.

On the dorsal surface of the penis were several serpiginous ulcerations, which are partly surrounded by broad superficial eroded condylomes. On the scrotum condylomata lata has a more mixed character shooting out in pointed ulcerations, small bundles from the broad surface. *On the forehead we perceive a number of granulated places of the size of a penny, having the above described character of the condylomatous exanthem. In the middle of the forehead they have more of a warty appearance. On the border of the hair they are already ulceratively destroyed.* On the thorax, abdomen and lower extremities purpura-patches of the size of a pin's head, are scattered, and in the umbilicus is a moist granulated condylome. The inguinal glands are the only lymphatics swollen, being of the size of a walnut.

After ten injections ($1\frac{1}{4}$ gr. subl. being used) the condylomatous exanthema began to heal. After sixteen injections, the purpura patches disappeared, also the *lata* on the genitals, bend of the thighs and umbilicus. The other symptoms disappeared also after the twenty-fourth injection, 3 gr. of sublimate altogether having been used.

Case 47.—August. B., peddler, fifty-eight years old, received into the Charité January 2, 1869. Patient says that seven months before his entering the hospital, he was for the first time syphilitically infected. At this time he noticed, two weeks after his last coitus, a superficial peeling off of the glans which quickly healed with the use of chamomile fomentations, without having to consult a physician. He noticed seven weeks afterward scabs and crusts on his scalp, but he used no remedy for them. *Status præsens:* Patient has flabby muscles and an œdematous appearance, making the impression of a "hard drinker," which is confirmed by his own statement, he twice having had *delirium tremens.*

The whole back of his head, the skin of the body and lower extremities

partly ; and the chin and nose are covered with indented tumors of the bulk of half a walnut. On the back of the head they are so closely together that they form a confluent tumor of the size of a small fist. The smaller tumors are of a pale red color, covered with thin impetiginoid crusts. The somewhat larger tumors have an intact surface of a wart-like glandular appearance. The largest show thick black or brownish crusts, which being removed, an ulcerated surface appears, with pungent pus-like secretions. On the nostrils an ulceration goes deeply into the tissue of the skin. Of other syphilitic affections there is nothing to be seen except swelling of the submaxillary, cervical and occipital glands.

Without any preparation, sublimate injections were used. Besides a good diet, we ordered small doses of sweet wine, and later a bottle of beer, daily. The patient withstood the deprivation of his accustomed beverage better than we expected, also he bore the injections well. They had a brilliant result. So that after giving twelve injections ($\frac{1}{8}$ gr. subl. *each*) the tumors were lessened to half their size. After further injecting of $2\frac{1}{2}$ gr. there was hardly anything left of the tumors. The patient was rather pale, but felt quite well.

ULCEROUS EXANTHEM.

To the *latter period* of lues belong those skin processes which come about by the ulcerative metamorphosis consisting of *vesicles* and *pustules*, and which are named *ecthyma* and *rupia syphilitica*. Here, during the ulcerative process of the infiltrated cuticle, under the exposed epidermis are formed those ulcers with deep flabby borders, being always reproduced by a concatenated after-development. This disease resulting from extremely bad nutrition, does not always contraindicate a hypodermic medication with a medicine which has always been reproached, not only with producing an analogous cachexia, but of producing ulcers similar to those described above; but I can say with satisfaction, that all patients laboring under similar skin affections, and their number has not been very small, have been healed with injections of sublimate, and the cure has been effected in a

relatively short time. Of a stay of months or even years, as I have seen in other hospitals, and as patients have related, was never the case with us. After the use of only a few small doses of the sublimate, the characteristic pyrimidal, thick brownish black colored crusts, dried up; generally beginning on the periphery, and soon after healing the middle, since here the crusts were the thicker. At the same time the livid redness disappears, which encircles the infiltrations of the ulcers. It is generally the consequence of a venous stasis which escapes ulcerative destruction and thus hinders the further ulceration of the skin. By lessening the secretion of the ulcerated bases, and the presence of impaired material, the crusts become dryer, soon consolidate and mostly dry up, leaving only a trifling moist, yet hyperplasic pale red color. To arrest this cellular proliferation of the granulated tissue is the object of further injection.

In contrast to that very often rapidly healing process sometimes these ulcerous crusts show a remarkable obstinacy, not only the larger, but sometimes the very diminutive ones. Occasionally reproduction begins in the form of single fresh small pustules. They sometimes deceive the surgeon in their first appearance, he taking them for a mercurial exanthem consequent upon the injection of the sublimate; but very soon they heal, thus showing the groundlessness of his suspicion.

In the following, I shall present some of the species "*rupia syphilitica*," which may be taken as an evidence, *that even this obstinate form of tertiary syphilis* gives way quickly to the injection treatment.

Case 48.—Carl P., shoemaker, 28 years old, of healthy and strong build, but of very pale appearance, was received January 29th into the Charité wards. The following is his deposition: suffered about four

years ago with gonorrhœa, which soon disappeared, after using injections. Three months ago, a few weeks after his last coitus, he saw an ulcer on the prepuce. Used for it borax and tar, with fasting. Two or three weeks subsequently, the now existing exanthem made its appearance. He dieted himself again, took sulphur internally, and externally used a wash of borax, and later, tar soap : but the eruption did not disappear. Some five days ago, hoarseness and weak eyes presented themselves. *Status præsens:* On the prepuce can be felt a large and very hard ulcer of the size of a walnut. The whole body is covered with a polymorphous exanthema, consisting of papulous and squamous efflorescences which are intermingled with a greater number of vesicles and pustules. *The vesicles are of the size of a lentil and close together in the region of the shoulder-blade and on the abdomen. There are a few on the face and forehead with pustules of the size of a pea. On the left eye a specific iritis in a mild degree has developed itself*, which after using atropia showed some adhesions.

Laryngoscopic inspection revealed redness and swelling of the mucous membrane of the vocal cords besides single superficial erosions on the mucosa of the anterior angle of the glottis.

We used the subcutaneous medication, beginning with $\frac{1}{10}$ gr. doses. The five following doses were about $\frac{1}{2}$ gr. each, and the last five $\frac{1}{5}$ gr. each, so, that for complete cure, $3\frac{3}{4}$ gr. of sublimate were used. The healing occurred in the following manner : After the fourth injection (about $1\frac{3}{4}$ gr. sublimate being given) part of the vesicles on the back were dried up and another part were metamorphosed into a puriform condition. After the eighth injection the pustulous exanthem dried up in crusts, which pealed off shortly after, leaving only superficial erosions of the cuticle, which quickly cicatrized. It was singular that after the described healing of these pustules, others were freshly developed but very soon dried up again.

After the fourth injection the subjective appearance of the iritis was somewhat bettered, and the dilitation of the pupil was normal, but the vessels of the sub-conjunctiva were so congested that we were compelled to apply eight leeches. There was noticeable no *stomatitis* until after the fourth injection, which resulted in salivation from the too frequent injections, so that an interruption in the treatment of ten days occurred. The stay of the patient in the hospital consisted altogether of twenty-four days.

Case 49.—Philip W., farmer, 26 years old, received into the Charité

Oct. 26, 1867. He says that six years ago he had a chancre and bubo, for which he used laxatives for quite a time. May, 1866, he contracted chancre again, and was then homœopathically treated. But in June he noticed an eruption on the skin, for which he first used a sweat cure, and afterwards an inunction cure, taking altogether eight weeks. But seeing that his health did not improve he came to our hospital.

Status præsens: On the prepuce there is an indurated cicatrix and a slight erosion. *On the surface of the left cheek we see an infiltration of the size of a penny, consisting of small confluent papules. Similar erosions we find on the forehead, but here they are covered with yellow, green, impetiginoid crusts. The skin of the scalp shows a greater number of deep-seated ulcers, which are only partly covered by black, brown, moist crusts. On the right arm there are four elevated red infiltrations, of the size of a penny, which show on their periphery, more especially, thick crust formations. Similar efflorescences, with a pronounced rupia-like characteristic ulceration, are on the right thigh and lower extremities.* The very thin dry hair can be easily pulled out. The lymphatic glands of the right inguinal region are more swelled than the left, and still more tumefied are the right cervical and left submaxillary.

The injections had the following effects: after the tenth injection, (amounting to 2 gr. of subl.), the erosions on the prepuce and its indurations had disappeared; the crusts on the body and head, were gone, and the slightly elevated places were infiltrated, as evidenced by the touch, but were healed in the middle. After fifteen injections (3 gr. subl. being used), *the infiltrations were much softer.* After twenty-five injections slight *stomatitis* occurred, but nevertheless, the patient in a few days was sent away cured.

Case 50.—Johanna S., 29 years old, wife of a cutler, was received into the hospital March 7th, 1867. Patient says but a very little about her disease. She remembers having sore places on her genitals several times. The present sores she had not particularly noticed. The eruption on the skin dates back three months ago, and she states positively that she never used any medication.

Status præsens: The patient is very much emaciated, of a pale, dirty, sallow color, cachectic habitus. On the left labium *min.* there is a superficial erosion. *A great part of the surface of the body, especially the back, chest, the upper and lower extremities, are covered with a convolution of vesicles and pustules, grouped together, with here and there papules covered*

with a thin layer of scab. In the right scapular region are rupia crusts of the size of a penny and pyramidal in shape. In removing them, the bleeding surface appears deeply ulcerated. *On the hand are ulcers covered with crusts which have taken on an impetiginous character. Ulcerations of the size of a Mexican dollar are visible on the lower part of the calf of the left leg, with livid, flabby, easy bleeding borders, encircled by varicose veins.* Between the third and fourth toe on the right foot, there is quite a large ulceration with a fetid smell and covered with a dirty secretion of a condylomatous character. In the left eye there is a well marked *iritis* with several adhesions of the retina. The left tonsil is partly destroyed by ulceration. The mucous membrane of the larynx is red and swollen throughout. In the middle of both vocal cords, gray-white patches are to be seen, produced probably by an ulcerative detritus. The inguinal glands are but slightly swollen, but the cervical are very much enlarged.

I used subcutaneous injections of sublimate with iodide of potassium for about a week, but left the latter medicine out of the treatment at this time. The first day we injected $\frac{1}{2}$ gr. of sublimate in one dose in order to combat energetically and quickly the iritis. Already on the next day the gums were very much swollen and easily induced to bleed. The eye was somewhat better. After the second injection of $\frac{1}{4}$ gr. of sublimate, the patient complained, not only of the prodromes of salivation, but also of mercurial ulcerations on the mucous membrane of the cheek and borders of the tongue. Chlorate of potassa was used both externally and internally for this, we stopping the treatment for three days.

The iritis had nearly subsided and only small adhesions remained on the borders. By the following injections of $\frac{1}{8}$ gr. and sometimes $\frac{1}{4}$ gr. per dose, the above detailed symptoms vanished entirely, so that we used in the whole seventeen injections of $4\frac{5}{8}$ gr. of sublimate. In place of the crust-like exanthem intensely brown-colored pigment patches appeared.

KNOTTY SYPHILOID.*

I discuss now a syphilitic formation of a disease which is, especially in a morphological sense, of the greatest importance, because a question has to be decided here, which in

* Knoten Syphilid.

spite of our best authors on anatomy and dermatology, is yet an object of a very spirited controversy—I mean the *lupus syphiliticus.*

Among these authors there are some which go so far as to assert that, between lupus and syphilis acquisita, all and every feature is radically different.

They particularly assert "that sufficient signs are wanting by which the variety, lupus syphiliticus, can be distinguished from lupus idiopathicus. In none of the cases of lupus, they say, in which an autopsy was made, was a combination with syphilitic affections of internal and external organs distinctly found. The very slow progress of the lupus, sometimes existing for years; the limited seat of the same in most cases; the entire painlessness; the small participation of the nutritive functions; the absence of cachexia and all swelling of the lymphatic glands; the want of regularity; and lastly the smallness of the knots, compared with their relatively long duration, and the non-appearance of the caseous metamorphosis incident to gummy tumors; all certainly speak most emphatically against their identity. Besides, very many defenders of the syphilitic nature of the lupi, themselves acknowledge the anti-syphilitic treatment without any result."

I am induced by these remarks to make the following observations:—

1. I first have to point out the fact that between the specific and idiopathic eruptions of the skin—as, for instance, between the syphilitic macula and the ordinary—no histological difference till now has been discriminated. And so it is between the small knots of the lupus idiopathicus and those of the knotty syphiloid. No histological difference

has been found in them, both formations belonging to what Virchow calls "granulation tissue."

2. As to the assertion that in no case of lupus, where autopsy was performed, were other known syphilitic diseases of internal organs found; I must say that my clinical material provided me with several cases in which, without doubt, syphilitic affections, as rupia, tophi, ulcerations in the cavity of the mouth, have been combined with lupus affection of the skin. I have seen during the last four years about twenty such cases, and at present I have in my wards three remaining patients of this kind. I took occasion to present one of them to several colleagues.

3. The chronological proportion is also in favor of our view. Specific lupus never occurs in the beginning of the syphilitic disease, where it might be taken as a coincidence, but it always appears as the last link, in the latest phases of the development of constitutional syphilis, being preceded by a number of more or less severe processes, as maculo-papulous syphiloid, iritis, rupia, sarcocele syphilitica, and especially syphilitic affections of the bone.

4. Concerning the specific alterations of the lymphatic glands not seen by some authors, I, on the contrary, can point out clearly, in several cases, enlargements and indurations; and further I have to remark that often in the latter stages of syphilis, the lymphatic glands are not only reduced to their normal size, but even, in consequence of atrophy, are hardly to be found, being below the normal size, as Virchow has shown it to be, in a similar way, with the sebaceous glands of the tongue.

5. As to the assertion that anti-syphilitic treatment has been of no avail against lupus syphiliticus, I will say in opposition to it, that some of our medical literature mentions

such cases, and besides, the subcutaneous injection method which I instituted with a number of cases (from twenty to twenty-four) in our hospital has never failed.

6. The assertion that the small participation of the nutritive functions and the want of all cachectic symptoms, speak against the syphilitic nature of lupus, is modified in two ways by my experience. On the one hand, a great number of patients, who are suffering under very active processes of syphilis, seated on circumscribed localities, enjoy relatively good health and appearance; on the other hand, a part of my patients affected with lupus syphiliticus show sufficient symptoms of a deep-going cachexia.

7. It is granted that *lupus idiopathicus* has its seat in the face mostly, just as lupus syphiliticus has its seat generally on the back and extremities. But not only are cases known and referred to by different authors where lupus appeared not only in the face but also on the extremities, and I, myself, and several other observers have had occasion to see lupus syphiliticus seated on the face, where it generally does not appear, and on the nose, forehead and cheeks.

8. I will not make any remark on the "painlessness" since a great number of syphilitically affected cases often run a painless course.

9. Concerning the last point, that the syphilitic knotty exanthema never enters into a caseous metamorphosis, as is the case with lupus idiopathicus, this circumstance alone will speak for it. As in all other exanthemata, we must take a special species of lupus syphiloid, which must be distinguished from idiopathic lupus.

From a number of nearly twenty cases lying before me, I take the following case of lupus syphiliticus, which was so typical in its total impression and its single appearance, and

was such a striking example of the disease, that I introduced the patient to Professor Virchow's notice.

Case 51.—Wilhelm K., a stone mason, thirty years old, originated from a family in which a dyscrasic habitus, especially tuberculous and lupus, has never been noticed. Married six years ago, but has had no children, his wife being reported in good health. He was till that time healthy and robust, but became sick for the first time in the year 1858, with a glandular abscess on the left side of the neck. There yet can be seen, above the insertion of the musculus sterno-cleido-mastoideus on the sternum, a cicatrix of a star-like form. Eight years ago the patient contracted a chancre on the penis, which, after a local treatment and internal medication with pills, probably containing mercury, seemed to heal after about four weeks. But a year later, already, ulcers in the pharynx made their appearance, which, as reported, have been rather deep-seated, and for which a long sarsaparilla sweat cure was ordered. This had a result lasting only about a year, so that a repetition of the treatment was necessary. The ulcers now present on the face, on the scalp, and especially on the nose, appeared, as the patient said, in 1864, for which, in our hospital, iodide of potassium and sulphur baths were ordered, with good effect. But the healing was not complete and did not last very long, the present diseased condition gradually coming on.

Status præsens, December 21st, 1868: Patient has flabby muscles, pale complexion, and very dry skin; *face very much disfigured by cicatrizations and deep loss of substance. The scars extend partly over the cheeks, chin and forehead, having a more or less rounded, oblong formation. The roundness of the cicatrix shows a clearly defined atrophy of the cuticle, having the character which is generally manifested by the cicatrized ulcers developed by ulcerative, broken-down knotty lupus. The long cicatrices have a star-like, bluish-white appearance.*

The left eyelids, already retracted in their tissue by the great cicatrices, are greatly swollen and firmly stretched over the eye, so that the latter was neither completely shut nor widely open. By such a state of lagopthalmus, the cornea is obscured, and exudations are going on that have nearly impaired the vision of this eye. *On the nose the cartilages of the nostrils are destroyed, more extensively on the left side. The point and top of the nose and a greater part of the septum narium are wanting, from the effect of a deeply-eating ulcer, it being nearly two inches long and one and a half inches wide, having the characteristic appearance of idiopathic lupus.* It

extends down to the upper lip, of which a part is ulcerated away. The remaining part of the upper lip is very much infiltrated, like lupus hypertrophicus, showing the well-known livid-red color. On the scalp in the vicinity of the parting of the hair, are crustous ulcerations covered with amber-colored horny excrescences, and partially with red-brown crusts as they appear in ecthyma and rupia. Both tibiæ have on their surfaces large hyperostoses, causing, nights especially, severe boring pains.

The left testicle is of the size and form of a large pear, hard to the touch, showing in the middle and on the border of the epididymis a knotty circumscribed induration, which was glued anteriorly to the inflamed, red, swollen and painful testicles. In the cavity of the mouth a total destruction of the left tonsil and the anterior roof of the palate is visible, in which region is stretched a small, ribbon-like, red strip of mucous membrane, extending from the uvula to the side wall of the pharynx. The right tonsil and uvula are intact. The lymphatic glands, especially in the cubital regions, are slightly swollen.

The patient is, on account of his previously described condition and the last preceding treatment, in a very weak state. Objections could consistently be raised against a common mercurial treatment; nevertheless, we began with him the injection cure immediately, with which the strength of the patient gradually improved and the detailed symptoms lessened.

The dolores osteocopi (pain in the bones) was the first to leave him, and consequently, by ability to get his rest at night, the patient gained strength. The swelling on the left scrotum, together with the inflammation and pain, already had subsided, after the use of $\frac{1}{3}$ gr. of sublimate; as also had the consistency of the scrotum likewise diminished. The ulcers of the face became cleaner and cicatrized from the periphery towards the centre; so that, after the further injection of $2\frac{1}{3}$ grs. of sublimate, they were reduced to nearly half their original size.

Ulcerations on the nose and lips were cured after using 4 grs. of sublimate. The thick ulcers on the scalp showed the greatest resistance, and they were healed only after the use of $7\frac{1}{2}$ grs. of sublimate. The cure then could be looked upon as complete, but still we used 1 gr. more. The duration of our treatment, with the frequent interruptions on account of salivation, lasted three and a half months.

As in the above described case, the following showed a

still more brilliant result of the subcutaneous method. In spite of all kinds of medication during a ten months' sickness, syphilis could not be stayed in its ravages. Not only was the patient emaciated to a skeleton almost, by the ulcers covering so much of the surface of the body, death was also almost unavoidable, on account of the fact that the syphilitic process had drawn the kidneys into complication.

Case 52.—Augusta Fiehl, twenty years old, of quite a healthy constitution, without any hereditary disposition to constitutional affections, had, at the time of her admission into the Charité, January 23, 1865, very hard erosions on the labia majora, accompanied, shortly afterwards, with broad condylomes on the labia minora and majora, plicæ femorales and tonsils. The patient used then a sarsaparilla sweat-cure, without staying the progress of the lues. On the contrary, after the course of a week, roseola patches were formed—in the beginning, only on the thorax and upper extremities; later, in other different regions. Besides, a papulous syphiloid was also formed, whose efflorescences were very soon developed on their points into small scales.

Not very long after, fever set in, with a temperature of the body of 39° *Cel., and with a frequency of the pulse reaching* 100 *per minute; and several vesicles were formed, some soon becoming pustules, and some forming into vesicles like those in pemphigus.* The former of these were situated more particularly in the bend of the lower and upper extremities, especially in the fossa cubitalis and poplitea; the latter were mostly on the anterior part of the neck. Very suddenly pain appeared in the right eye, extending to the depth of the orbit, and of a boring character. Intense *iritis*, with great photophobia and flowing of tears, followed. By an energetically instituted antiphlogistic treatment, consisting of inunction of unguentum hydrag., with opium, atropine, leeches, &c., the iritis of the right eye disappeared, but shortly afterwards *the same iritic process was developed in the left eye*, which required a still more energetic use of the same antiphlogistic treatment for effecting a cure.

During this intercurrent episode with the eye, *pustulous efflorescences of the skin began to be very prolifically developed*, increasing in size on account of confluency and destruction of the infiltrated ulcerations. *The always deeper-going ulcerations did reach not only the subcutaneous cellular tissue, but even the fascia and muscles were reached and drawn into complica-*

tion. Especially was this the case in the region of the os sacrum and the extremities. *The ulceration on the os sacrum was particularly distinguished by its large circumference, it being six inches long and three inches wide. Here the underlying bone could be plainly felt with the probe.* A smaller, more round-shaped, but as deeply-going ulceration was situated on the calf of the right leg, and the periosteum of the *tibia* could be clearly seen in a circumscribed place.

To combat the above detailed condition, we used very many medications for months without any results. Besides the repetition of the already mentioned sarsaparilla sweat-cure, which lasted for a few weeks, inunction and different baths and ingredients in the same were used. Later, sublimate baths and the wet sheet were employed, according to Priesnitz. Internally we used iodide of potassium; and lastly, solutio arsenicalis Fowleri.

During the treatment, we used, for strengthening the system, quinine, iodized iron, and later, cod-liver oil.

With this treatment, the patient was emaciated to almost a skeleton, in the course of nine months. *In this cachectic state I found her when I tried for the first time* on her my injection treatment. She was so weak that she was compelled to keep in bed continually, not being able to raise herself for a precise examination into her condition. In order to see the skin affections, during my clinical lecture, I was obliged to have assistants raise her from side to side. The ulcerations secreted a profuse, pungent, purulent matter. *On the face there was a lupus-like syphiloid. On the arms, layers, in pyramidal formations, placed over each other, could be seen, which were composed of thick crusts of dark brown chocolate-colored appearance, under which purulent ulcers were situated.*

Urine was very albuminous—its specific gravity, straw color, &c., all pointing to severe renal disease.

Prognosis, under such circumstances, could but be very unfavorable; because all sorts of treatment had proved of no avail. The weakness of the patient and the *impending kidney affection* were a contra-indication to every new energetic treatment.

But, notwithstanding all that, I concluded to use with this patient injections of sublimate, on account of the old adage "*Melius anceps remedium, quam nullum in casibus desperatis.*" Because of the great prostration, I began the treatment cautiously, with very small doses; and seeing no bad symptoms arise, but, on the contrary, a very slight and hardly perceptible improvement, I began to give larger doses.

The great difficulty with the injection was, that the whole body was so covered with broad and deep ulcerations that I had but very little space of sound and healthy skin where I could make my punctures. Another difficulty I found in the dislike of the patient, who refused, and seemingly with a perfect justice, to undergo anew a painful treatment, since all our endeavors had failed in restoring her health. But by and by the feeling of the patient gave way to a better spirit, on account of the improvement in her disease.

The result was indeed for me, and for all who witnessed it, a striking one. I used about one hundred and fifty injections, amounting to a total of about 15 grs. of sublimate, and the method being quite new then, the case made considerable propaganda for the subcutaneous treatment. A large circle of my pupils followed the case with apparent interest, seeing how changed the patient became. *She finally could be discharged entirely cured, having quite a healthy countenance, herself being astonished at the result.*

, After a year, A. F. returned again, for a short time, to the Charité, on account of some small ulcers, which appeared on the right forearm. They quickly vanished with the administration of a few injections, and the very healthy and almost *blooming* appearance of the patient was really wonderful to us, who had seen her in her ghastly and emaciated condition.

GUMMATA OF THE SUBCUTANEOUS CELLULAR TISSUE.

We may consider, very properly, those gummata *which develop themselves in the deeper cellular tissue*, as a different species from the above-described knotty syphiloid. They are distinguished from them first especially by their greater size, which comes about chiefly on account of their situation in the subcutaneous cellular tissue, where they find in the net-like texture more room for development than the lupous knots which are imbedded in tense, unyielding layers of cuticle.

Generally these gummous formations first commence during the latest phase of lues, and mostly as final links of the syphilitic dyscrasia. But contrary to this general obser-

vation, I observed this appearance in two cases rather sooner.

In one of these cases, which might properly be called "galloping syphilis," this affection appeared almost as a first symptom of relapsing syphilis, and accompanied mostly with orchitis gummosa and rupia. In both cases, as also in those patients where no ulcerative metamorphosis in the gummous granulated tumor has taken place, I succeeded in complete resorption by the subcutaneous treatment, so that neither a scar nor depression of the skin remained, and not even a discoloration showed the former seat of these so obstinate tumors.

The first result was mostly visible in the lessened circumference of the ulcers, the consistency of them seemingly increasing in *hardness*, but time alone will overcome that, and complete restoration crowns the work. It may be explained thus: that with resorption, the softer contents of the ulcer began to heal, and only later is it the case with the peripheric surroundings which have a more or less sclerotic taint.

It was singular to notice that *the nearer lymphatics became irritated and inflamed, being enlarged, reddened and painful to the touch.* It may be possible that, absorption in the lessened gummy tumor carries along the detritus, and this may be the cause of the irritative symptoms in the lymphatics.

But not always were the gummata in patients in a yet intact state. *Very* often they presented *thin open ulcers, which sprung from an ulcerative metamorphosis.*

The ulcerative process may here be traced in most cases to a mechanical origin, and it seems to be induced and favored by the neighborhood of bones, especially epiphyses, narrow folds of skin, &c., which may be easily irritated. As

in diseases of the larynx and pharynx, we must here also be careful not to force the injection or prolong it. On the contrary, it is necessary to institute here a surgical treatment.

The quantity of sublimate necessary for the described gummous tumor is generally very large. In lupous ulcer sometimes 3 gr. were sufficient, but in the gummata from 6 gr. to 10 gr. of sublimate on the average were needed, but cases occur in which even this amount must be increased.

Case 53.—Max. L., twenty-two years old, a cigar maker, was received into the Charité Hospital October 9, 1868. Patient says he is of a healthy family, and, with the exception of the ordinary diseases of childhood, he was well up to his thirteenth year. In the following year he suffered considerably with glandular swellings in the neck, which disappeared with the use of cod liver oil.

The patient was infected eleven months ago with chancre, in London, which seemed so insignificant that he consulted no doctor. Only five months ago his present ailment began, but medical aid was of no avail. The medication was a botanic one, *as the attending physician did not think it justifiable to use any mercurial preparation, on account of the ulcerative character of the rupia which seemed to spread rapidly.* But on the contrary, as the ulcers enlarged more and more, healing of them was despaired of, and his physicians advised him to leave England, and go back to Germany, partly on account of the climatic change which might bring about a better state of things.

Status præsens: Patient is very much emaciated, of pale complexion, blonde hair, cachetic appearance, and of a very delicate constitution. I found him lying in bed at my first visit, he being unable to move, on account of the great pain induced. Examination revealed *rupia crusts on both fore arms, on the forehead, the scalp, on the back and lower extremities, of the size of a penny up to the size of a silver dollar. Beneath the thick brown crusts, deep seated ulcerations are to be seen covered over with pus. On both tibiæ we find diffuse, painful, gummous swellings, having an elastic consistency. Similar swellings are on the left clavicle, especially at the acromial end. On the left of the scrotum we can feel small tumors, but on account of too great sensitiveness they cannot be plainly made out. After a few days, examination*

showed that there are gummous tumors there of the size of a hazelnut. In the subcutaneous tissue of the right sternal region in the vicinity of the nipple, and on the left elbow, a little above the olecranon, painful, gummous ulcers are found of the same size as above. The lymphatic glands in the submaxillary region are not swollen, but in the cervical and inguinal they are somewhat enlarged. Patient complains very much of acute pains in the tibial regions during the night, and of an inability to move without experiencing great suffering. On the inner lamella of the prepuce there is a cicatrized place of the size of a pea, being devoid of pigment discoloration. It is not at all hard to the touch, and according to the patient, it is the seat of the original chancre.

On account of the great debility of the patient, I used only on alternate days the subcutaneous injection in $\frac{1}{8}$ gr. doses. This being well borne, and the dolores nocturni also abating, we injected the same dose of sublimate daily. Very shortly afterwards the ulcers were reduced in size and depth. The prodromes of salivation appearing, we were compelled to interrupt the treatment. After the twenty-first injection, the patient complained of a cough, produced by a cold, and on account of a lung complication we again suspended the injection for awhile. After a treatment of three months with a few interruptions on account of stomatitis, 6 gr. of sublimate having been used, the result was very satisfactory on the described affections, besides the gummy tumors had vanished. In the place of the rupia ulcers, cicatrices were visible on the skin, of a livid color, a red quilted appearance with a cancroid character. Patient gained so visibly and assumed such a healthy countenance, that my clinical pupils were astonished to see so marked a change.

About six weeks after his discharge from our hospital, he returned again on account of ulcerations appearing. Examination of the patient showed that several of the above described *cancroid cicatrices were superficially ulcerated and broken down, chiefly on the back and right shoulder. But we were surprised to find gummata of the size of a hazelnut, situated about three or four inches below the axilla, and on the anterior wall of the thorax, one and a half inches beneath the right mamma.* Aside from this, there was nothing abnormal in the patient. We instituted the injections again, beginning with $\frac{1}{8}$ gr. doses of sublimate per day, soon increasing to $\frac{1}{4}$ gr. doses.

The ulcers had already healed when 2 gr. of sublimate had been used, but the gummata disappeared *much more slowly. The glands around*

the axilla on this same side, and later the glands about the nipple were much swollen and painful to the touch. In addition to this, a bubo of the size of a hen's egg, made its appearance. We used for that gray mercurial ointment, but without avail. Neither had the internal use of iodide of potassium any result. We began again, on this account, the sublimate injections, and produced an entire healing of the gummata, but only a trifling diminution of the lymphatic glands. But the sensitiveness of the patient increased after the amount of 3 gr. sublimate had been used, and we had to pause. These injections did no good; the swellings seemingly having no connection with syphilis. Therefore, I concluded to use inunctions of iodide of potassium, which proved to be just the remedy.

The now following case seems to have a double interest, therapeutically and pathologically considered. It is of a pathological interest, inasmuch as a number of intact gummata occurred, and a gummy tumor already gone into a deep ulceration, had involved the epiphysis of the bones, while, as a general rule, they are situated on the diaphysis.

Therapeutically it is interesting, because here we see iodide of potassium quickly healing a syphilitic ulcer on the posterior wall of the cavity of the mouth, but after a year, a relapse has already occurred that has developed dangerous symptoms, and yet the case is fully cured by injections of sublimate.

Case 54.—Augusta W., twenty-four years old, married, was received into our hospital October 26, 1867. The data remembered by the patient are rather meagre. She originated from sound parents, and says that, with the exception of a slight inflammation of the eyes, she has always been healthy, and denies that she ever had any disease on her sexual organs.

Status præsens: Patient of weak constitution, flabby muscles, gracile habitus, and of very pale complexion. On the posterior part of the cavity of the mouth there is an ulcer of the size of a large penny, reaching deeply into the tissue and having very sharp borders. The soft palate is mostly, and the uvula is entirely destroyed.

We used daily for the patient about 50 gr. of iodide of potassium. On account of so great a debility we prescribed also a weak decoction of cinchona rubrum. The local treatment consisted of gargarism of chlorate of potassa and painting the ulcerated surface with nitrate of silver. Under this treatment the ulcers cicatrized over, so that the patient could be discharged at the end of the sixth week.

That the iodide of potassium treatment was only a palliative one was shown by the return of the patient in about one year. The *status præsens* then was as follows: The described ulcer in the pharynx remained cicatrized, but the epiglottis was so much ulcerated that only a small portion of it remained. *The condylus externus and internus of the right elbow was swollen and painful to the touch. On the external condyle there could be plainly felt an enlargement of the size of a large penny. It was distinctly circumscribed from the surroundings. The tumor was characterized by its elastic and somewhat fluctuating consistence as a gummous formation. On the clavicle and very close to the extremitas acromialis, there was situated an ulcer two inches in diameter, which reached to the non-necrosed bone, exposing two-thirds of an inch in length and one inch in breadth. It secreted a thin pus, and was without doubt developed from the ulcerative destruction of a gummy knot. Beneath the right patella there was a tumor, two inches in length, which showed a division in its middle. Its consistence was still more dense than the above described gummata.*

We immediately began the injection treatment and prescribed for the ulcer on the clavicle, irrigation with cold water by means of the atomizer, as already pointed out. Under this treatment the tumor under the patella was the first to subside, so that after the use of $1\frac{3}{4}$ gr. of sublimate it was entirely gone. The remaining required rather more energetic doses.

The ulcer on the clavicle then diminished rapidly, granulation taking place, so that the patient, after using 4 gr. altogether, during a stay of five weeks, could be discharged as cured November 18th, 1868.

VII. SYPHILITIC AFFECTION OF THE EYE.

Syphilitic affection of the eye is an important disease. It sometimes appears isochronal, with the earliest manifestations of syphilis on the skin; sometimes it accompanies lues

in its tardy appearance, and sometimes, even, the *disease of the iris* is the only syphilitic trace in the relapse.

The really syphilitic iritis is very difficult to discriminate. Generally there is more or less injection of the conjunctival and of the sub-conjunctival vessels which surround the cornea; there is opacity of the iris; spotted appearance of the same produced by sub-serous inflammatory action; adhesion of the pupils to the crystalline lens, resulting from exudation; and further, there are the subjective symptoms, viz.: the intolerance of light and deep-boring pains of the orbita shooting along the course of the supra- and infra-orbital nerves; lachrymation and the lessening of vision. Sometimes there are small tumors of the size of a mustard-seed up to the size of a kernel of wheat, of a yellowish-red color. These are generally situated in the middle of the tissue of the iris, sometimes starting from the central border and reaching into the aqueous humor. These tumors have been considered by some authors as condylomes, by others as gummata, and they are characteristic of the syphilitic nature of the iritis.

The plan of treatment adopted by us for syphilitic iritis, consisted in an energetic injection of sublimate adapted to the case in question. When inflammation was very intense; exacerbations of fever at night; penetrating pain not only in the eye but also in the supra-orbital region; increased lachrymation with great intolerance of light; when there was high graded opacity of the iris; reddish appearances of the same on account of sub-serous exudation, so that the development of gummata was imminent, &c.; then I began immediately to inject $\frac{1}{4}$ gr. of sublimate, repeating the injection, according to the intensity of the iritis and the individuality of the patient, so that sometimes already on

the first day $\frac{2}{3}$ gr., and in one case even 1 gr., was injected. The result was, in every case, very good, so that we had relatively a quick and complete cure—in lighter cases already after $1\frac{1}{2}$ gr., in harder cases after 5 or 6 gr.

The last-mentioned dose was particularly necessary with three patients, in whom these characteristics in the iris were formed.

Besides this general treatment, *we used locally* a weak solution of atropia. Only in exceptional cases did we apply leeches to the temporal regions.

It is remarkable *that during and towards the end of a subcutaneous treatment, used for something quite different, an iritis may develop itself suddenly.* This reminds us of the already mentioned appearance of suddenly developed broad condylomes on the pharynx. Such cases seem not to be published in medical literature, and I shall relate some of them by and by.

Concerning the prevalence of the iritis, I have a record of twenty-five cases which came under my observation during four years. In eighteen cases which were carefully recorded I find the following complications were present:—

Broad condylomes on the genitals and surroundings,	7 times.
Superficial erosions at the same place,	6 "
Uulcus durum on the penis,	1 "
Condylomatous ulcers between the toes,	1 "
Maculous syphiloid,	4 "
Squamous "	4 "
Papuloso-vesicul. syphiloid,	2 "
Pustulous "	2 "
Papuloso-pustulous "	3 "
Gummy knots on the scrotum,	1 "
Tophi of the tibia,	1 "

In three patients every syphilitic complication was wanting.

In the following three cases, I give the first as an example of an often-recurring relapse of an iritis produced by syphilis, during a period of twenty-four years. The other two cases are illustrations where condylomatous iritis was quickly and thoroughly eradicated by injections of sublimate.

Case 55.—K., a merchant, forty-six years old, contracted in the year 1844 a hard chancre, and he underwent a long treatment, the details of which he cannot remember. It was seemingly healed, but he had an inflammation of the eye the year following, which was examined by several oculists and pronounced syphilitic. In spite of all treatment the iritis made its appearance every year until the year 1860, *i. e.* fifteen times. The treatment each time required several months. The last treatment he received from Dr. Koblanck, which was a mercurial one, being very energetic and followed by a good result, since then there has been no reappearance of iritis for seven years. In October, 1868, the patient was again attacked, and sent to me by the above-named gentleman.

Patient is somewhat weak and cachetic. The iritis is characterized neither by subjective nor objective syphilitic symptoms, but by great conjunctival and sub-conjunctival injection, paleness of the iris, and dead appearance of the pupil, which is polygonally stretched. Vision is very much impaired, and at a distance of four feet it is nearly impossible for the patient to discern anything. He complains of a fixed boring pain in the orbita and supra-orbital region.

I injected $\frac{1}{4}$ gr. of sublimate in the back and $\frac{1}{20}$ gr. in the temporal region, and the above symptoms quickly disappeared. The further use of $\frac{1}{4}$ gr. lessened the inflammation, but produced toxical symptoms, as active diarrhœa, abdominal pain, nausea, great prostration, &c., so that we had to suspend injections for two days. We used after this $\frac{3}{4}$ gr. of sublimate in the next four days, which caused the inflammation to subside so rapidly, that the patient thought himself well and he resumed his work. But he caught cold, and the iritis got worse. On that account I began again the injections, giving $\frac{1}{8}$ gr. doses, and in the course of ten days I succeeded in overcoming the affection of the eye. In order to guard against further relapses, I injected 2 gr. more of the sublimate. But whether we accomplished a radical cure or not the future will show. It was noticeable that the patient, in spite of the

cold and stormy weather, attended his usual avocation without danger and risk.

Case 56.—Louisa H., 22 years old, was received April 1, 1869, into the Charité, and showed the following syphilitic affections: condylomatous erosions at the labia majora and minora; pigment-colored exanthem on the trunk, and *iritis condylomatosa sinistra*. The characteristic appearances of the inflammation of the retina were the following: *great injection of the conjunctival and sub-conjunctival vessels, narrow and* stretched *pupil, and small excrescences of* angular *appearance and yellowish-brown color in the region of the pupil. In the upper segment of the iris, we can see a prolific granulation of the size of a kernel of wheat, which rises button-like over the tissue of the iris.*

I used ¼ gr. of subl. on the back and $\frac{1}{20}$ gr. in the temporal region by subcutaneous injection, and I applied atrophia to the eye. Examination with the opthalmoscope revealed an irregular enlargement of the pupil. There were especially two places glued together on the inside border of the pupil, one below and inside, and the other above and outside.

In consequence of these adhesions the pupil looked like a figure 8. On the whole inner border of the iris we see now plainly white-yellowish exudation-plaques which overlap the pupil, in an angular and thread-like manner. The yellowish prolific granulation on the outside free borders of the iris is plainly visible over the tissue of the iris.

In the following three days we again used daily ¼ gr. of subl., and thereby produced strong salivation. The examination made April 6th, showed that the condylomatous prolific granulations on the iris were reduced to half their former size, and the other symptoms were much improved. The pains in the orbita and the intolerance of light, had all disappeared. Vision was better. Notwithstanding the existing salivation we again used ¼ gr. of sublimate. The consequence of this forced injection was that the adhesions were completely broken up. The iris showed a normal lustre, and of the condylomes no trace could be found.

To completely heal this case of condylomatous iritis 1¼ gr. of sublimate were sufficient.

Case 57.—Henrietta B., 29 years old, of weak and somewhat anæmic appearance, and mother of a healthy child 2½ years old, was already treated one year ago in our hospital for a chancre, receiving only local

medication. Examination, Dec. 19, 1868, revealed the following symptoms:

Purulent vaginal discharge, urethritis, a pigmento-papulo-vesiculo-pustulosum exanthem, especially on the back and abdomen. On the fauces is erythema, the right tonsil being tumefied and eroded. *There is a double condylomatous iritis and keratitis punctata sinistra.*

About both eyes there is great conjunctival and pericorneal injection. Both cornea are much clouded. The discolored iris, especially of the right eye, is adherent to the crystaline lens at several points posteriorly. The polygonal pupil has the shape of a vertical oval keyhole. From the border of the pupil two prolific granulations are visible. They are of the size of a pin-head, with a spongy appearance, reaching into the aqueous humor. The cornea itself is reddened in three or four circumscribed places. With the iritis of the left eye we also see prolific condylomatous granulations, but they are smaller than in the right eye, and seem to be in a state of development. No dilation of the pupil follows the use of atropia.

I prescribed injections of sublimate at once, using the first day $\frac{1}{8}$ gr. and the following three days, $\frac{1}{4}$ gr. daily. After the use of $\frac{3}{4}$ gr., the pupil dilated nearly to its normal size; the right but slightly, remaining yet in its polygonal shape. After using 1 gr., intolerance of light and the pericorneal redness disappeared in a great measure. The aqueous humor of both eyes was clearer, and the condylomes of the left eye disappeared; those of the right eye were much subdued in appearance. The conjunctival redness persisted, however, but in a lessened degree. But on account of salivation, the injections had to be suspended. After again using 3 gr. the condylomatous prolific granulations in the right eye were entirely eradicated, the iris assumed its normal condition, only, that the structure was a trifle faded in appearance. At the same time the other symptoms of the patient disappeared, and she was discharged cured.

The following three cases concern patients in whom iritis appeared, either during an anti-syphilitic treatment, or after a long duration of the same.

Case 58.—Augusta W., 27 years old, some eight months advanced in pregnancy, mother of a healthy boy 4 years old, was received into the hospital Oct. 22, 1866, with the following symptoms: condylomata lata with erosions on the labia majora and minora, pudendi, at the anus, on

the plicæ fermorales, and on the tonsils; soft ulcer on the thigh; inguinal, cervical and submaxillary glands tumefied.

We used at once injection of sublimate, but the affections remained rather obstinate, so that about $5\frac{3}{4}$ gr. were used altogether. *Suddenly, after being seemingly cured, an iritis appeared in the right eye*, characterized by great conjunctival and sub-conjunctival injection, discoloration of the iris, no reaction from light, great intolerance of the same, lachrymation and pain in the orbita.

I used at once $\frac{1}{4}$ gr. doses of sublimate, following it up for five days, at the end of which time the inflammation of the eye was entirely gone. Very shortly after our cure the patient was delivered of a healthy and robust boy. Soon after the child was taken with a severe blenorrhœa of conjunctivæ, coryza, also broad condylomes on the anus, and a papulous exanthem on different parts of the body. It died in twenty-four days.

Case 59.—Fred. S., day laborer, 24 years old, received November 20, into the Charité, exhibited the following affections: Condylomata lata and erosions on the nates; acuminata on the lamellæ of the prepuce; condylomatous ulcer on the lips; papulous exanthem, more especially on the nape of the neck.

The infection took place three months ago; the specific symptoms showed themselves only two weeks ago. I prescribed for the patient inunction, with gray ointment, 4 grammes daily (64 gr). The broad papules healed after the 10th inunction. The ulcers on the upper lip began to cicatrize after the 16th inunction. But after *a use of* 64 *grammes* ($1\frac{1}{3}$ *oz. nearly*) *of the ointment, an iritis of the right eye was developed.* The appearances were so characteristic that I presented them to my clinical students as clear distinct pictures of a syphilitic iritis.

I used injections of sublimate, which, after the use of $\frac{3}{4}$ gr. during four days, brought about a complete dissipation of the inflammation of the retina, the other syphilitic complications disappearing at the same time.

In the following case inflammation of the iris occurred in spite of the subcutaneous injection; a papulous exanthem developing itself on the abdomen, neck and back of the patient.

Case 60.—L. R., 15 years old, was received into our hospital on the 19th of February, 1865, in the following condition:

There were broad erosions on the labia minora, and plicæ femorales; the left pudendum was tumefied. For these affections the patient had already undergone before admittance into the Charité a very severe so-called, "hunger cure," of about five weeks duration.

After using in the course of four days ½ gr. of sublimate subcutaneously, the eroded papillary excrescences on the pudendal lips, which, were till now flat, became larger, but they however soon diminished after the use of 1 gr. of the same. The conjunctival and sub-conjunctival vessels of the right eye suddenly became injected; the iris somewhat discolored; the pupil stretched; and great pain was felt in the orbita, shooting towards the supra orbital region. At every trial to fix the eye on an object great lachrymation ensued. At the same time with this iritis, the already mentioned characteristic papules appeared on the described places.

The further hypodermic doses of ⅛ gr. of sublimate caused in the weak and young patient a quite severe stomatitis, on which account we interrupted the treatment for about one week. To guard against relapses we injected about ½ gr. more, so that we used altogether about 1¾ gr. with the patient. The patient returned twice to the Charité after the lapse of fourteen or eighteen months, but with a most minute examination, we could find no sign of any syphilitic affection; there being nothing but blenorrhœic processes.

VIII. SYPHILITIC SCROTAL TUMORS.

This organ, whose parenchyma is very rich in nerves and capillaries, is quite often the seat of gummous processes. The development of the process runs, like all gummous affections, a very latent course, because the slow formation of the tumors produce no disturbances in the sensibility. And not very seldom it is the physician who first points out to the patient this affection. And this is the more strange, since the generality of men watch, as is well known, every functional disturbance of the testicle with the eye of an

Argus. And I can aver that in my practice, in all cases where I found these alterations of the testicle, the patients did not consult me on that account, but for some other syphilitic process. Therefore, I could get but few data respecting it from the patients themselves. But this latent course seems to me a very valuable diagnostic sign, because all other pathological processes in this organ produce very much more pain than the gummous, and hence are much sooner noticed by the patient—as, for instance, the tuberculous and carcinomatous formations.

Concerning these indolent gummy tumors, I have had occasion to observe two different kinds. The one form is characterized by circumscribed, semi-lunar, hard knots of the size of a pea or hazelnut, reaching above the parenchyma of the scrotum. This formation is generally the first state of the syphilitic sarcocele, where the scrotum has already more or less enlargement. This is quite natural, considering the development of the gummata of the scrotum, which arise from the albuginea, in which the testicle is wholly wrapped, and from the septa-testis, they being already hyperplastically degenerated before becoming specific neoplasm.

In the second form of the gummous sarcocele on the largely hypertrophied testicle, a few circumscribed tumors of hard resistance were found; but generally the whole testicle was changed into a knotty mass.

As to the therapeutics for this orchitis gummosa, it might be well to preface the treatment with the internal administration of iodide of potassium; but with a long resistance, and in relapses, I think it justifiable to use the injection treatment. In the cases observed by me, we had generally to treat very rebellious and obstinate affections, and some-

times very long-standing relapses. On this account I was obliged to use greater doses, and repeat them quite often. But, after all, in some cases I failed entirely to effect a cure. The tumors were considerably swollen, but once in a while there were on the testicle small elevations, having a hard resistance; and here I used Fricke's method of bandaging with adhesive straps, which sometimes had a good result.

Of my numerous cases, I shall give the following marked case, with a view to show, on the one hand, the good effects of the subcutaneous method; and further, that in a syphilitic patient, after a lapse of ten years, a relapse may occur, and too in a very dangerous form, which is attributed by anti-mercurialists to the administration of quicksilver; but here the patient himself was a follower of Bærensprung, and never had used, for his first syphilitic affection, nor for his secondary symptoms, a grain of mercury.

Case 61.—St., a merchant; from a healthy family, and of a robust constitution; always healthy; was, in the year 1856, syphilitically infected. His physician diagnosed a soft chancre; but a year after, symptoms of constitutional syphilis made their appearance, showing the error committed. Professor Bærensprung was then consulted, and that gentleman, just having begun his metamorphosis as an anti-mercurialist, prescribed for him for a length of time, with seemingly good results, the decoctum Zittmanni, and to be sure of its efficacy, he ordered iodide of potassium to be used for some time also. The patient returned the next winter from a voyage to Norway, where he made the acquaintance of Professor Bœck, and delivered this gentleman's known works to Virchow and Bærensprung. The latter assured him, after repeated examination, that he was sound, not only for the present, but healed from the effects of syphilis for the future, as the patient himself told me *particularly*, because, according to Bærensprung's opinion, the time "necessary for a relapse" was already overpassed, since the patient had lived during a cold winter in the North. Suspicious erosions on the penis, probably of a condylomatous nature, were treated only

with nitrate of silver, locally—together with iodide of potassium internally. This cure lasted for a few years; but, as we shall see, a relapse proved the cure to be only temporary. The patient suffered for quite a time with an obstinate cold in the head, as he thought; but in the year 1867 the quantity and quality of the secretion were so augmented that great masses of mucus and pus, intermingled with blood, were secreted. The nostrils became stenosed, and the voice had that peculiar nasal twang. The snoring during sleep was so peculiar and loud that it could be heard at quite a distance. "My whole nervous system," added the patient, "was by that heavy cold and an awful headache so affected, and I was so weak, that I hardly could keep awake."

I examined the patient in June, 1868, and found the following *status præsens: On the velum and palate-roof, shallow, not deep-going, ulcerations; and on the epiglottis I perceived an ulcer of the size of a small penny. The cavity of the nose was filled with a yellow, dirty, thick-flowing secretion from ulcers reaching far into the swollen mucous membrane. The face of the patient appeared bloated, especially around the eye and nose. In a further examination, I found, to the surprise of the patient, verg large gummous knots on both testicles, of the size of hazelnuts, which had so changed the right testicle into a bulky, elevated mass that it resembled a fist in shape.*

I began the subcutaneous injection at once, and after a lapse of eight days, there was a visible change for the better in the affection of the mucous membrane of the nose. In three weeks the same was again in its normal state.

The knots upon the testicle were more unyielding. Even after the lapse of two and a half months, after using $5\frac{1}{2}$ grs. of sublimate subcutaneously, small remnants of the tumors were yet present. The patient was much delighted with the result, and broke off the treatment; but after seven weeks, the right testicle was again tumefied, several of the elevations being felt much less plainly than before. The secretion of the nose was somewhat augmented and tenacious, being occasionally streaked with blood.

I prescribed now iodide of potassium, and for the nose I used Weber's nasal douche, with chamomile decoction. At the same time, I bandaged the scrotum, *lege artis*, with straps of emplastrum hydragyrum. But all this was without avail, and I was obliged to use again injections of sublimate. And I had the satisfaction to notice, after the use of 5 grs. of sublimate, that the testicle was reduced to its normal size, and that also the last remnants of the affection in the vicinity of the mouth had disappeared. Up to the present time (June, 1869), no relapse has yet occurred.

IX. SYPHILITIC AFFECTIONS OF THE BONES.

The affection of the bones is the most latent and obstinate effects of syphilis. In no other system of the human organism does lues, at the same time, so often show its polymorphous character as in the osseous.

These processes generally begin with irritative diseases of the periosteum, but gradually rise, by hyperplasia, into prolific granulations. They show their culmination by formations of elastic gummous tumors, which change either into real hyperostosis, or go into a metamorphosis, finally resulting in caries and necrosis, thus displaying their malign nature.

The first commencement of syphilis in the bones consists in a swelling of the periosteum, which can hardly be detected by an examination, and which, according to high authorities, does not form a flat swelling, but "is elastic under pressure." It is commonly concomitant with superficial affections of the skin and mucous membrane, and is accompanied with lancinating pain. They are distinguished in a characteristic manner from the rheumatic pains caused by an eruptive fever, which pains are sufficiently marked by their fixed and circumscribed seat, and by the sensitiveness of the fibrous periosteum to every pressure.

Later, there are more palpable changes of the bone, especially in those flat, unossified intumescences of an elastic consistency. They occur on the tubera frontalia, diaphysis of the tibia, and frequently on the sternum, clavicle ribs, &c., and in the latter places are very often seated near the articulations. Quite frequently I have found the disease in question having its seat on the processus mastoideus. Here I

would discover just behind the ear—sometimes already after the expiration of three or four months, and sometimes still later—flat swellings painful to the touch; even swellings of the size and form of an almond, which could very easily be confounded with swelled lymphatics. In some instances they would be sensitive to only a small extent and were hardly noticed by the patient; in other cases they had spontaneously more or less painfulness.

In the later course we see the periosteal gummy tumor, with simultaneous action of the upper layer of the bone, take on an ossified condition, changing into plano-convex hyperostosis or exostosis and osteophytes.

All these formations are characterized by a boring pain, which prevents sleep, and consequently affects the nutritive system very much.

The changing of the periosteal gummous tumors into ulcerative metamorphosis, *i. e.*, the development of an ulcerative periostitis—I never noticed in my patients because those processes were already healed by my subcutaneous injection treatment. In some cases I have had occasion to observe caries and necrosis which existed with the patients when they were brought into our wards, and I thought it justifiable to regard suppurative periostitis as the exciting cause, because the initial affections on the bones were yet visible.

The therapeutics of the syphilitic diseases of the bones has the same indication as in the already described gummous processes. The same principles exist here, as there, to distinguish, for iodide of potassium or injections of sublimate. The effect of the latter depends on the state of the bone affection. In the first described state, the lancinating pain, and the periosteal tumefaction disappear after small doses of sublimate rather quickly. The characteristic elastic tumors

require larger doses. They are absorbed in a short time without a depression of bone remaining on the affected places. And it seems as if the apparently dead and partially broken down tissue is reducible by a fatty metamorphosis, and can, therefore, be absorbed. In already new formations, from the really sclerotic bone development, the results of the injection are not so favorable. Even in long standing cases where different treatments failed, and where great metamorphosis of form and texture had already taken place, I succeeded in effecting a complete disappearance of the already mentioned pain in the bones.

In quite a number of cases, a decided lessening of the volume of the tumors took place on account of resolution of the remaining gummous formation, but the hyperostosis did not diminish, which was produced by hypertrophy of the exterior of the bone, and the chalky process which the periosteum underwent. To restore such a bone to its integrity could not be expected from any treatment.

Concerning the ulcerative process of the bone, produced either by periostitis or osteitis, or resulting from the ulcerative process of the soft parts reaching into the bone, the same rule holds good that has been laid down respecting ulcers on the skin, reaching down to the bones. They need a special surgical interference to remove the sequestra, even if the syphilitic dyscrasia has been eradicated by sublimate injections.

We have already published cases with affections of the bones, and in the following cases I take those showing the different periods of the disease, beginning with the first state.

Case 62.—Julius W., blacksmith, twenty-six years old, was received into the Charité wards February 22, 1867. Eight weeks previously, he

had gonorrhœa, two weeks afterwards a hard ulcer on the glans, which caused, in about eight days, phymosis.

Patient is of fair constitution and muscle. *His chief complaints are shooting pains in the region of the right musculus pectoralis. Examination revealed that the seventh rib, near its junction with the sternum is but little swollen, yet very painful to the touch. Of further syphilitic processes*, we find glandular ulcers; induration of the lamellæ of the prepuce; the right tonsil swollen and maculous exanthema. The inguinal glands were principally swollen.

We injected for the first three days $\frac{7}{16}$ gr. doses of sublimate. Already after the third injection, the ulcers on the glands were healed, and the phymosis gone. We reduced the doses one-half to $\frac{7}{32}$ gr. After the seventh injection, the induration on the prepuce was nearly gone, and the exanthem entirely vanished. After the ninth injection (3 gr. having been used) the periostitis on the seventh rib had also subsided.

The patient was discharged cured, April 12, 1867.

It was remarkable that after the second and fifth injections, the already described symptoms of intoxication appeared under the form of a gastritis with colic pains, bloody diarrhœa, which passed away without any interference by pausing for a few days with the subcutaneous medication.

Case 63.—Johanna M., twenty-three years old, was received January 14, 1867. The patient was already in our syphilitic wards four years ago, suffering from broad condylomes and condylomatous angina, besides she had a squamous exanthem, and was treated with a five weeks sarsaparilla sweat-cure. At present she suffers from lupus syphiliticus and rupia. On the shoulder, hip, thigh and right tibia, there are places partially round and oval, and of a brown pigment color, which are elevated somewhat above the skin, showing some infiltration. With some the centres are deepened, the periphery being covered with a brownish white, and somewhat leaf-like crust, by the removal of which bleeding ensues. On the moist places the developments could be traced to efflorescences. Besides, here and there over the body there were several cicatrices of the size of a penny, which resembled brown circles with lighter centres. *The right tibia was swollen to a great extent, also the left metacarpal bones. Both places were very painful to the touch. At the same time the patient complained of extreme boring pains during the night at the same localities.*

The treatment consisted of sublimate injections, with the simultaneous

use of very small doses of iodide of potassium. After the sixth injection the lupous places were covered only with small squamæ, soft to the touch. On the extremities there yet were some infiltrations, and a large crust in the vicinity of the left knee. After the tenth injection (1¼ gr.) the lupous ulcers were entirely healed, the pigment in the centre of the respective places pale. On the left lower extremity there was a thin rupial crust, beneath the same were prolific granulations of the corium in the surrounding smaller crusts. The swelling of the tibia and metacarpal bones was lessened and they were painless. After the eleventh injection, the former infiltrations vanished, and the swelling on the tibia was very much less. After the twelfth injection (1½ gr.) the tumefaction had also disappeared.

The patient was discharged, cured, February 23, 1867.

In the following patients there were greater affections of the bone, which remained healed after a treatment with the subcutaneous injection, notwithstanding several relapses of rupia, which probably were occasioned by the voluntary interruption of the treatment by the patient.

Case 64.—William R., baker, thirty-five years old, was received into the Charité Hospital November 19, 1865. His former history showed that the patient had, two years ago, ulcers on the frenulum, for which he used some mercurial pills. About seven weeks ago, he contracted again a new ulcer on the same place, which has been accompanied by an eruption on the skin. Again mercurial pills were used which caused salivation. *Status præsens:* An induration near the destroyed frenulum; eroded *lata* near the pharyngeal palate roof; a papulous squamous exanthem over the whole body entirely, more or less of them having scab formations; *tophi on the forehead and tibia;* boneache (dolores osteocopi), and slight tumefaction of the inguinal, cervical, submaxillary and cubital glands.

The patient received twenty-four injections during seventeen days, amounting to 3 gr. of sublimate. After using 2 gr. the elevation on the frontal bone, and the night pains were already gone, but the exanthem was not quite healed. The patient, nevertheless, left the hospital by his own choice, but returned within a month. Examination then revealed, that of the former affections, only the papulo-squamous ex-

anthem on the face, neck and on the extremities, were yet present, and that also the above mentioned glands were still swollen. I prescribed a sarsaparilla sweat-cure, but being without result after a six weeks' use, injections were again instituted, which caused a partial recovery, after the use of $1\frac{3}{4}$ gr. of sublimate, but no complete healing.

In spite of our warning, the patient left again, but returned once more to the hospital after three and a half months. Besides superficial erosions of the internal lamellæ of the prepuce, we found only several papulous efflorescences of the size of a pea on the forehead, neck and right upper arm which were quite soft to the touch. We treated him locally only, and discharged him soon afterwards.

He sought relief again in our wards two and a half years afterwards. He told us that up to July, 1868, he felt quite well, having suffered much affliction and perplexity in obtaining a livelihood. He was obliged to go for quite a time without any animal food. At this date horny excrescences had developed themselves on the scalp, which soon ulcerated.

The patient was very much emaciated and cachectic. We found by examining, that the head, as well as the back and right arm, was covered with rupia crusts of the size of a penny. On the uvula and epiglottis there were ulcerations as large as a pea.

We first prescribed a good strengthening diet with wine and beer, and after a fortnight, we commenced our injection treatment, healing all the ulcers and eruptions completely with 4 gr. sublimate. But to guard against relapses, we used 2 gr. more of sublimate, and had the satisfaction to discharge the patient completely cured and strengthened. Quite recently he sent me a letter telling me of his complete health.

X. VISCERAL-SYPHILIS.

In consequence of the high interest which latterly is centred voluntarily upon the teachings on syphilis of the internal organs, I regret very much that I have but a few cases wherein I have made any observations. These cases of visceral syphilis do not occur as often as the specific diseases of the external and more superficially situated regions of the body, but after all they are not quite so rare as generally supposed. Very many of the cases are wrongly diagnosed,

and therefore but sparsely seen in our syphilitic wards of the Charité.

That the internal organs are quite frequently syphilitically affected, is well authenticated by careful post-mortem examinations, especially in pathological anatomical institutions. Syphilitic diseases have been observed very frequently, particularly in the brain, liver, kidneys, and even in the lung itself, and we are compelled to feel thankful to Virchow for this careful dissection and examination, which has made such researches famous throughout the world.

The difficulty of diagnosing visceral syphilis, *intra vitam*, is very great, arising out of the long interval of years between the infection and the outbreak of the disease internally, and from the deficiency of a specific group of symptoms which distinguish internal syphilitic formations sharply from the syphilis vulgaris.

A. SYPHILITIC DISEASES OF THE LIVER.

The liver is generally the chief organ affected in the greatest number of cases of visceral syphilis.

Although immediately after the appearance of syphilis in the fourteenth century, the liver was looked upon as the organ primarily attacked by the syphilitic contagion, seemingly poisoning the circulation, it is only recently that a sound pathology of syphilitic disease has been established. It is to be regretted that clinical observation has not kept pace, in this respect, with pathological anatomy.

Although pathology has pointed out the more or less characteristic symptoms of a *syphilitic perihepatitis* of a simple syphilitic interstitial, gummous and amyloid hepatitis, we do not possess a single pathognomonic sign by which we

can distinguish, during life, these diseases, caused by syphilis in the liver, from diseases of the same organ, from other cases. Neither the subjective nor objective symptoms, detected by palpitation, percussion, &c., nor even microscopic examination, nor chemical analysis of the secretions and excretions themselves, can furnish us evidence for a diagnosis. Diagnosis will always have to be based on the fact of a syphilitic infection, together with the simultaneous symptoms of perhaps a yet existing syphilis, and the exclusion of other sufficient causes. Another help for diagnosis is generally and mostly overlooked, I mean the *therapeutic experiment.* We abstain from a mercurial cure on account of the cachectic state of the patient, which we regard as a contra-indication for this venenum frigidum. A good treatment instituted, would, in many cases, not effect a radical cure, but would prolong life. The subcutaneous treatment with the sublimate would not restore the parenchyma to a normal structure, which had been vitiated by an amyloid process, nor the liver-acini which, by the retraction of the tightened tissue are atrophied, but used at the proper time, the inflammatory process which is more or less connected with the shrinking, would be stayed, and thus the hyperplasia, the prolific growth of tissue, would be anticipated. But how seldom with such diseases a suitable antisyphilitic cure is instituted, is shown by a careful perusal of our medical literature. The cases are not very rare where only on the dissecting table the right diagnosis is made.

We grant that in recent times a certain progress has been made in the diagnosis of syphilitic cirrhosis, but we cannot say the same of that affection which, according to my observations, often has more of a specific character than we suppose, I *mean the syphilitic icterus.*

There is certainly not a sure diagnostic sign between icterus and syphilis of the liver, and in our cases we could detect none, because clinical observations, as has already been said, have not as yet established them.

But the following points seem to us of more or less importance in designating an icterus a syphilitic one, viz.:

1. *The relatively often appearance* of icterus with syphilis.

In the last four years I have observed nineteen cases of icterus. Among these sixteen were syphilitic, and the other three were not affected with secondary syphilis. The number of this latter class is generally, in my wards, twice as large as the number who have constitutional syphilis.

2. *The coincidence of the icterus with the syphilitic affections of the skin and mucous membrane.*

In fourteen syphilitics, the icterus was accompanied

9 times with broad condylomes on the sexual parts and surroundings.
5 " " hard ulcers on the same.
6 " " ulceratively destroyed condylomatous granulations on the pharynx.
5 " " maculous exanthem.
3 " " maculous squamous exanthem.
1 " " maculous papulous exanthem.
1 " " papulous exanthem.
1 " " pustulous exanthem.

3. *The simultaneous swelling of the lymphatics*, which, in all cases, is more or less characteristic.

4. *The therapeutical result of the subcutaneous injection.*

Of sixteen syphilitics suffering with icterus

4 patients were treated with the sarsaparilla sweat-cure.
12 " " " sublimate injection.

It was noticeable that with the first class the healing process of the icterus was slower, and accompanied with great

prostration, nausea, vomiting, vertigo, &c. But on the contrary the icterus run a quicker course in those persons treated with the injection, and no untoward symptoms were noticed. I never observed any toxicological effect of the bile on the blood or nervous system. No patient had convulsions or delirium. All improved quickly; the appetite reappeared, and the strength in due course of time; the painful symptoms of the disease, as unquiet sleep, headache, flatulency, prurigo and constipation, were soon gone.

I further made this observation, which is worthy of remark, and may lead to additional investigation: as is well known, patients with icterus proper, emaciate quickly, but our patients, on the contrary, had not a rapid loss of strength or flesh. One could judge of the case in this respect by frequently weighing the patient. My patients kept their strength and flesh, in spite of my giving relatively large doses of sublimate subcutaneously, and further on account of our peculiar system in the hospital, a dietetic regime could not be very well executed.

Case 65.—Thresa B., seventeen years old, of a robust constitution, was received into the Charité wards February 17, 1867, and showed the following symptoms: There were ulcerated *lata* at the labia majora, on the tonsils and mammas; also squamous exanthem near the upper extremities. On the chin, cheeks, upper lips and on the sides of the nostrils, we saw remarkable fine drawings (squamæ gyratæ) of greater or smaller circles, which reminded one of herpes circinatus and gyratus. A close examination revealed small epidermic scales, seated on the surface, which was swollen into minimum papules. The inguinal, cervical and cubital glands were enlarged. *The color of the skin and conjunctiva is yellow with a shade of brown. The hue of the visible mucous membrane, especially on the hard and soft palate,* is a dirty yellow. *Laryngoscopic examination showed the vocal cords to be discolored in the same* manner. *Tongue coated; the dullness of the liver, commencing at the sixth rib, is not very intense, and overreaches in the parasternal and mammillar line, the lower*

border of the ribs, a little more than usual. The region of the liver is somewhat painful under touch, also the epigastrium which is a little swollen. The dullness over the spleen is not enlarged. Percussion on the abdomen is loud, deep and symptomatic. Only in the left iliac region was the sound less prolonged and fuller. The whole abdomen is somewhat enlarged.

The patient complains of general malaise, loss of appetite, bad taste, increased thirst, restless sleep, and a feeling of heaviness in the region of the stomach and right hypochondrium. The itching is not very significant. Since two days there has been no stools. There is voided daily of urine sixteen hundred cubic centimeter in quantity, of a specific gravity of ten hundred and twelve, of a very yellow color; a chemical analysis revealing much biliary coloring matter in the same.

We first prescribed an infusion of rhubarb, and as the subjective and objective symptoms of the icterus did not disappear, I began to suspect the disease to be syphilitic icterus, and therefore commenced the subcutaneous injections of sublimate. The first three days we injected doses of $\frac{1}{8}$ gr. each, and the following three days doses of $\frac{1}{4}$ gr. each. The treatment had a good result. After the use of $1\frac{1}{2}$ gr. the skin lost its brown color, and after the further use of the same quantity, it assumed its natural appearance. The patient gained right along, so that with 2 gr. used, she felt quite well. After using still another $1\frac{1}{2}$ gr. of sublimate, the biliary coloring matter could not be anywhere more detected, and she was discharged after three weeks, cured.

Case 66.—Mary H., twenty-one years old, of a gracile habitus, and a weakly constitution, always healthy, says that about two weeks before her admission into the Charité, she suffered from indigestion.

On December 2, 1868, the following was revealed by examination: condylomata lata at the labia majora which is tumefied; soft ulcer on the posterior commissure of the vagina; acuminata in the same place; an ulcerated anal fissure; *elevated lata near the tonsils and the posterior roof of the pharynx, and icterus.*

An accurate examination failed to reveal any demonstrable physical changes of the liver or abdominal organs. The pulse was rather sluggish, being sixty-five per minute. The color of the skin and conjunctiva was somewhat like mahogany; the urine contained biliverdine; the stools were of a clay color; the appetite was small; the feeling of strength about normal; the sleep at night undisturbed.

During the instituted sublimate treatment the patient gained continuedly; the appetite increased; the icteric color of the skin and urine

diminished; the fæces assumed more and more their natural hue, and lastly, the subjective and objective symptoms of the icterus disappeared after the injection, subcutaneously, of 1½ gr. of sublimate. Also the plaques mucqueuses of the pharynx entirely vanished, but the condylomata on the labia pudendorum increased so that it was necessary to inject 3 gr. more of sublimate.

B. SYPHILITIC DISEASES OF THE KIDNEY.

There is yet a certain obscurity about the *syphilitic diseases of the kidney* which remains to pathological anatomy to explain more fully, but we are able already to point out with certainty *a syphilitic interstitial and gummous nephritis*, and even an amyloid degeneration of the kidney; not only Virchow in his lectures, but also the dissertation of Barde,* appearing under his præsidium. Also, Arn. Beer,† and the French authors, especially Cornil‡ and Lancereaux,§ have shown important necroscopic facts bearing on this form of disease of the kidney. To use for these syphilitic affections of the kidney a mercurial treatment, especially the subcutaneous injection of sublimate, might look, at the first glance, rather improper, since Wells, Blakall and Gregory, and recently Pavy and Sackowsky, have stated that mercury *not only induces albuminuria, but also causes grave disease, as parenchymatous and amyloid degeneration of the renal organs.*

As older authors, so in recent time, Kussmaul defended mercury against this imputation, and has shown that, with

* De Syphiliticis Renum Affectionibus. Berolini, 1863.

† The Interstitial Syphilis. Tubingen, 1867.

‡ Memorie sur les lesions antomiques du rein dans l'albuminurie. These de Paris, 1864.

§ Traite de la Syphilis. Paris, 1866, p. 289.

workmen who manipulate quicksilver, no albuminuria could be found, and those workmen who applied the quicksilver to looking glasses, laboring under disease of the kidney, had their renal affection as a consequence of an already existing tubercular process of the lungs. To detect albumen in the urine, and to settle the question, I examined the secretion from fifty patients, taking those who received the relatively greater doses of the sublimate subcutaneously. The examination was made at different stages, in the beginning and the further development of the disease, and even at the end of the treatment. Among the patients there were even such as had more or less salivation, and even some of them showed appearances of intoxication consequent upon abnormally large doses of the sublimate being subcutaneously injected.

Not in one of all these cases could I detect a trace of albumen, and furthermore I will remark that I also failed to find any trace of sugar in the urine.

And, therefore, I am justifiable in making the assertion, that hypodermically injected sublimate produces no affection of the kidney which could be detected by the presence of albumen in the urine.

Since I consider myself justifiable by the facts, in not attributing to mercury a deleterious effect on the kidney, my therapeutical results give me on the contrary, the conviction that the subcutaneous method in the first state of syphilis might be of a beneficent character, and as evidence of this view, I produce the following cases, which might be augmented by further illustrations.

Concerning the cure in the later stages, I am not able to give any proofs. That the sublimate is not able to restitute the cicatrized tissue of the kidney as detected by Virchow, nor bring about the functional integrity of an amyloid de-

generated tissue, holds good with the kidney as with all other organs.

To state that a better success attends the subcutaneous method, than any other antisyphilitic treatment of these affections, is impossible, since a greater number of patients is necessary wherewith to make a reliable comparison.

I will only mention that before introducing my method, I treated two patients with a long course of the *sarsaparilla sweat-cure*, the one being in the early and the other in the advanced stage of the disease. The result was rather a pitiful one. Both died, and a post-mortem examination revealed a diffuse nephritis with the one, and the other had an amyloid degeneration of the kidney.

The following are cases treated subcutaneously:

Case 67.—Ann A., twenty-one years old, was received into the Charité on the 17th July, 1866. The patient, already in 1865, had been in our wards, on account of erosions on the labia minora, a vaginal discharge and small soft ulcerated patches at the vaginal introitus; she was locally treated for three weeks, March 10th, 1866, on account of diphtheric ulcerations on the left pudendal lip; maculous exanthem on the trunk. The sarsaparilla sweat-cure was also used during the same time. Twelve weeks ago, she was confined in her eighth month of pregnancy, with a child, which lived six weeks.

Status præsens: the patient is of delicate, feeble constitution, looking care-worn and pale. *The face is somewhat tumefied, especially beneath the eyes, besides there is slight œdema near the joints of the lower extremities.* The following syphilitic appearances are present: condylomata lata covering the pudenda, at the left angle of the mouth, and near the tonsils, and on the roof of the mouth; maculous exanthem; loss of hair; vaginal discharge; urethritis, and some swelling of the inguinal glands.

Examination of the chest showed the existence of a slight bronchial catarrh. *The urine was acid, containing much albumen, a little blood, bladder epithelium, fibrine cylinders and oil globules.* Temperature 37.6 Celsius, pulse 84, appetite, bowels and sleep, normal.

We used at once subcutaneous injections of sublimate, giving $\frac{1}{10}$ gr. doses for two days. *The quantity of urine passed in twenty-four hours, consisted of* 1500 *centimeters with a specific gravity of* 1013. Afterwards we gave $\frac{1}{8}$ gr. doses.

The patient complaining of great pain in the kidney regions, we applied six cups. Up to the twelfth injection ($1\frac{1}{2}$ gr. sublimate being used nearly) no change for the better was visible. Also in the quality and quantity of urine there was no alteration.

But soon the œdema disappeared, and *we could detect no fibrine or blood corpuscles in the urine.* The albuminous ingredient was lessened. After the thirteenth injection salivation had already occurred. At the same time the patient complained of great headache, nausea, vomiting and vertigo. *The urine was again tinged with blood and albumen*, the specific gravity being 1012 and the quantity 1600 cubic centimeters.

On the following day, the blood increased in the renal secretion, and also the headache, with severe pain in the knee joint. The patient was very feeble; restless sleep; appetite and stools were wanting. Again six cups were applied to the sacral region, and I prescribed confection of senna for the bowels and used tannin and opium.

After the fourteenth day, the condition of the patient improved. But on account of the non-disappearance of the syphilitic symptoms we used again the hypodermic injections, besides the tannin. After the third injection of $\frac{1}{10}$ gr., *the blood and albumen in the urine disappeared. The quantity increased to* 2000 *cubic cent., the specific gravity being from* 1015 *to* 1010. The color was a pale yellow. The maculous syphiloid faded out, and I discharged the patient after using altogether 3 gr. of the sublimate. Several months after, the patient returned again to our wards, November 10, 1866. Her appearance was healthy, and she said she had been well since her discharge. Of constitutional symptoms of syphilis, no trace was left. There was only acuminata on the labia, an ulcus molle on the introitus vaginæ, besides fluor vaginalis and urethritis. *The urine was of normal consistency and free from fibrine cylinders, albumen and blood.* Two days after admission, the patient was taken with a profuse diarrhœa which was checked by opium. We discharged her Nov. 24th.

After six months, Anna A., was again received into the Charité on June 6, 1867.

An examination of the quite healthy appearing patient, revealed eroded condylomes, like excrescences, on the labia majora, and in the vicinity of the anus; vaginal discharge; an abcess on the right gland

of Duverney; the lymphatic glands only in the inguinal region were swollen. On account of the not well marked character of these excrescences, we used only a local treatment of argentum nitricum, which produced, in three weeks, a complete cure.

It is noticeable in this case, that the patient was suffering from a stomatitis which had the character of a mercurial one, although the patient denied having used any preparation of mercury. Gargarisms of chlorate of potassa cured this affection.

Case 68.—Fred. S., a laborer, eighteen years old, was received April 1, 1868, into our wards. Patient says he had a chancre four months ago, and a skin affection following in two months thereafter.

Status præsens: The patient has flabby muscle and a delicate habitus; looks pale, and the visible mucous membrane seems anæmic. He complains of a frequent desire to urinate; shooting pains in the lumbar region, and a dizziness and pain in the head. *He particularly complains of a lack of air which he feels once in awhile. Examination revealed œdema of the face, arms, feet and moderate ascites. The quantity of urine daily passed is from* 800 *to* 900 *cubic cent., with a specific gravity of* 1019, *of a brown color. Microscopic examination shows it to contain blood corpuscles, albumen, and fibrine cylinders quite abundantly.* Of syphilitic appearance, I found on the back, the upper and lower extremities ecthymatous ulcers of the size of a penny, which did not reach very deeply into the skin. The inguinal and cervical lymphatic glands were much swollen. In the nose were superficial ulcerations, on the mucous membrane which secreted profusely pus and mucus. Exploration of the chest and abdomen revealed nothing abnormal. The heart's sound at the apex was very loud and strong; vesicular respiration is sometimes augmented; liver and spleen normal.

Although the patient was dropsical, we thought the use of the sublimate was indicated because we had the opinion that syphilis was the cause of the nephritic affection.

We used at once $\frac{1}{4}$ gr. subcutaneously, the next day reducing the dose to $\frac{1}{8}$ gr. After the sixth injection, or the use of $1\frac{1}{4}$ gr. of sublimate, the general feeling of the patient was better, the dyspnœa, especially, being diminished. *The anasarca and ascites were considerably reduced; urine was voided more profusely, and increased after the use of* $2\frac{1}{4}$ *gr.* to 4000 cubic cent., the specific gravity being 1021. *The color was yellow, but somewhat clouded on account of mucus being present. Albumen or fibrine cylindroids could not be detected nor blood corpuscles.*

A continuation of the injections completed the cure, the subjective and objective symptoms entirely disappearing. The ozæna and ecthyma were healed, and we were able to discharge the patient after the use of $2\frac{3}{4}$ gr. of the sublimate.

C. SYPHILITIC AFFECTIONS OF THE BRAIN.

What we have asserted of syphilis in general, holds good concerning *syphilis of the brain.*

It exists much oftener than is generally supposed. If we take the many post-mortems and the lesions found there in the central nerve apparatus, which can be pronounced with more or less certainty as residues of a preceding syphilitic process, the opinion will force itself upon us, that in the majority of cases, a wrong diagnosis allowed the fatal issue. Among the instances are to be classed apoplexy, hemiplegia paralysis, epilepsy and even psychosis, mania, hallucinations, melancholy, &c. Prof. Jaksch of Prague, says, in his valuable paper* on syphilis of the internal organs, in a very characteristic way, that "a revision of the hospital and insanity cases would show that syphilis is too little looked upon as a cause of mental derangement."

Concerning the pathological and anatomical changes in the brain suffering from syphilis, the symptoms are more manifold even than they are in syphilis of the skin. But it is to be regretted that they are not yet known in their characteristics, nor anatomically specified.

In recent times again, Virchow has been the first to clear up the obscurity in this branch of science, which may give rise to still more important developments in the future. The gummata are not to be looked upon as the only manifestation

* Prager Medicinische Wochenschrift. 1864, No. 1–50.

of syphilis. We know that the disease holds on to its polymorphous character, causing not only specific irritations in the form of thickenings, vegetative growths, granulations, and even condylomatous excrescences. Besides these manifold syphilitic processes, we find that even the different parts of the brain may be the seat of syphilitic degeneration.

Not only the dura mater on its outer and inner surface, and semilunar prolongation is visited by syphilis, but also the pia mater, arachnoidea, ependyma and even the greater and lesser brain. And here the syphilis is not only concentrated on the one or the other part, but it may attack the substance of the hemispheres, also the large ganglions, thalamus opticus, pons varioli, pedunculi cerebri and cerebelli.

The danger of brain syphilis does not wholly consist in the fact that a single part of this organ suffers disorganization, but that a disturbance is also caused in the nearest surroundings, thus complicating the affection. We see that the single tissue by the exudative inflammation, may take on the growing process here, the fatty metamorphosis there, and the nerves which are exposed to pressure will become atrophied, and the blood-vessels also obliterated. By this latter process, we may explain the apoplexies which have always been witnessed with syphilis, as existing in some mysterious manner. Such revelations belong to recent investigations, and Virchow was the first who proved an obliteration of the carotis cerebralis. Similar cases may be found in the publications of this distinguished author, especially in his work on Malignant Tumors, Vol. II., p. 451.

It is not the place here to detail those pathological processes occurring in the central nervous apparatus. But I will not omit this occasion to repeat again that pathological anatomy, coupled with clinical observations, will be able to

contribute to a better knowledge of brain syphilis. It will be able to do it very often. In post-mortem examinations we generally find the last products of syphilitic degeneration, *i. e.*, the coarser material changes, while on the other hand the finer beginnings may be found, very probably, by the help of clinical observations.

We must consent that a peculiarly formed tissue like the syphilitic does not cause a difference in the quality of the functional disturbance produced by it, but there are always starting points which may assure, either in a positive or negative manner, a diagnosis in syphilis. To the former belong the antecedents of the patient, the coincidence of syphilitic affections in other organs, their development, chronological data, the intensity of single symptoms, the remission and exacerbation as to headache, especially at night. The negative points are the exclusion of all etiological symptoms based on an accurate examination of all organs of the patient.

As to the *therapeutical indications* for brain syphilis, restoration of the destroyed nerve tissue is out of the question. A nerve cell destroyed by inflammation, or on account of pressure or fatty metamorphosis, cannot be restored *ad integrum;* neither can a brain mass despoiled by hæmorrhagic detritus be replaced in its normal condition. The same is the case with vessels which have become impermeable by an adherent thrombus. We are glad to say, however, that these described processes are the last phases of syphilitic disease. In the earlier stages treatment may cause a certain healing by involution and absorption after a regressive metamorphosis, or at least it may stay the further development of the affection. It seems that the connective tissue of the brain, encircling it in its coarse and fine rugae, and its pathological proliferation may take on a retrogressive metamorphosis in

consequence of a therapeutical treatment, just as do the outer integuments of the body which are histologically similar in tissue. As the inflammatory, exudative and condylomatous prolific granulations of the skin and mucous membrane, and even the periosteal layers of bone are undergoing changes by the absorptive process, so also, the histologically similar tissues of the brain, pia and dura mater, arachnoidea, ependyma, &c., or the adventitious tissue of the vessels in the cranium may undergo the same pathological processes. That "absorption may diminish and eradicate the gummy knots in the brain," Virchow has already pointed out. It almost seems, according to his researches in pathology, that gummous formations in the brain, change not so frequently into the more dangerous puriform metamorphosis as the same constructed tumors of the skin and bones, and that here fatty metamorphosis is always favorable in prognosis.

This view might be taken at first glance as a hypothetical one, but it is fully confirmed by many clinical cases, well authenticated, in which cerebral syphilis was healed by a timely antisyphilitic treatment. Our medical literature contains the record of very many syphilitic brain affections, which either by mercury or iodide of potassium have been wholly eradicated. Among these are paralysis, epilepsy, and psychosis of every description. I refer to Yvaren, Sandras, Brach, Baumès, Romberg, Trousseau, Jaksch, &c.

I will remark here, a very significant fact for practice, that all those remedies which had a result, especially the mercurials, have been used not only once, but frequently and energetically. Romberg, in his work on "Diseases of the Nervous System," p. 918, says emphatically, "If anywhere a correct diagnosis may save a patient, it is especially true with these paralyses. *The specific remedies are mercury and*

iodide of potassium, which accomplish wonders here; but their use must be persevered in sufficiently long. Also the decoctum Zittmanni is a suitable remedy here." The fear that a forced use of these remedies might be dangerous to the nerve apparatus, seems to be without foundation. Ottensee has, in one of his works, a hesitancy in regard to the deleterious effects of these drugs, but it has not been verified in the least, and the most accurate observers have failed to find any evidence to substantiate his statement.

My own cases, where I have had opportunity to observe the effect of the sublimate, subcutaneously used, have not been numerous, because, as already said, the patients having these diseases were sent, very frequently, to other wards on account of a wrong diagnosis.

I never saw, in my patients, syphilitically affected, even in those grave forms which are apt to be connected with syphilis of the nerves, a transformation of the disease to the nervous apparatus, which may be owing to the quick regressive course of the syphilis caused by the subcutaneous injections.

How and in what manner my method excels other ordinary treatments for syphilis of the cerebral organs, I cannot decide for want of comparing material. I had several patients in my private practice, especially with hemiplegia, but on account of their leaving town, I cannot give any accurate statement concerning their recovery, and therefore I must fall back on my few cases in the Charité. I must say here that, although my patients improved rapidly, I have not a single case of a total cure to chronicle, probably because several were satisfied with their improved condition, and left the hospital, while others were sent by us to other wards as

nervously and mentally deranged patients, where was a better convenience for those of this class.

The following are the cases in question:

Case 69.—E. F., a merchant, thirty-one years old, descending from a healthy family, suffered, in 1863, from a hard chancre, and used for the same inunction for three weeks. Two months after he had a papulous exanthem on the forehead, for which he took, during five weeks, Dzondi's pills, and later iodide of potassium. He noticed, eight weeks afterwards, a hoarseness and a painfulness in deglutition. He now used Zittmann's treatment as prescribed. During the war in Schleswig-Holstein, 1864, after a great deal of service, he suffered *suddenly from paraplegia* of the lower extremities. After a number of foot-baths, and the use of mineral water, the paralysis of the right foot disappeared, the left remaining in its paralyzed condition. He had great torpidity of the bowels; catarrh of the bladder, and paralysis of the same. At his admission, July, 1865, we found the following conditions: feebly built, flabby muscles, and a paleness of the visible mucous membrane; myopia of both eyes; sensorium perfectly clear; no paralytic symptoms in the region of the nerves of hearing; tongue has a yellowish coat; appetite good; abdomen tympanitic; stools produced only by laxatives; dullness over the hepatic region; spleen normal; thorax well built and normal; respiration, costo abdominal. Auscultation and percussion does not reveal anything abnormal. Dullness of the præcordial region of normal extent. Heart sounds clear. Pressure over the well proportioned spinal column not painful. Both lower extremities were of the same length as shown by accurate measurement from the spinæ il. ant. sup. The malleoli and knee-joint were upon the same level. When lying quietly on the back, the use of both extremities is not affected with the exception of a slight impairment of the left. Sensitiveness is normal. In the *erect position, the patient rests more on the right than on the left foot, in consequence of which the whole of the left side of the body seems somewhat lax.* The left shoulder is some lower than the right. Pressure on the spinous processes of the sacral region causes no pain. *In walking the left foot is raised but a little from the ground. Patient drags the same, assuming thereby a shuffling gait. The mentioned paralysis of the bladder still exists, the patient being unable to retain his urine.* Constipation still obstinate and only by strong laxatives can the bowels be moved. Pressure over the region of the bladder causes no pain. On the scrotum and penis there are several erosions.

In catheterizing the patient with an elastic catheter, we encounter a hindrance in the vicinity of the prostate gland. By an examination, *per rectum*, we find the middle lobe of the prostate some swollen and very sensitive to the touch. Urine is alkaline, of a clay color, with a milky white sediment. Electricity is more sensibly felt on the paralyzed extremities than on the sound.

We believed, from the previous history, we had to deal with a syphilitic paralysis, and our opinion was strengthened in this view by the absence of other etiological momenta tending to a different diagnosis. But I resolved not to use the sublimate injection at once, and, therefore, prescribed iodide of potassium internally with galvanism. This treatment resulted in bettering the condition of the paralyzed bladder. But the *paresis of the lower extremities existed in the same degree*, therefore, I thought myself justified in using the *sublimate injections*. We injected daily $\frac{1}{8}$ gr. sublimate hypodermically. After the use of twenty injections, or $2\frac{1}{4}$ gr. of sublimate, a decided improvement in the movements of the lower extremities could be seen. After the further injection of 1 gr. more, *the movements were almost normal.* The patient was, unluckily, satisfied and left.

Case 70.—H., a druggist, forty-one years old, was received into our wards January 1, 1866. The antecedent history of the patient, *on account of indistinct utterance from paralyzed vocal cords, proved very unsatisfactory.* Only after improvement had taken place, could we get the following from the patient: In May, 1865, he contracted a hard chancre on the prepuce, and used as a remedy about 50 gr. calomel, according to his statement. But the syphilis reappeared, under the form of a maculous exanthem, in October of the same year. He used, without consulting a physician, *hydragyrum iodatum rubrum et flavum.* But seeing no result from this treatment, he used iodide of potassium, and a certain "wood tea." Shortly after he had *loss of memory and confused thoughts, accompanied with aphasia*, so that his relatives brought him to the hospital in the following condition:

Feeble, emaciated body; flabby muscles; a paleness of the visible mucous membrane; apathetic expression of the countenance, with a somewhat fixed gaze; pupils of equal size, reacting normally to the light; patient follows the movements of objects placed before him only for a short time. *In the nerves of the face no paresis is discoverable.*

Physical examination of the organs of the chest and abdomen reveals nothing important, only the sound in the left supraclavicular region is

rather higher than normally it should be, while the sound of the left regio-supraspinata is a trifle duller. Auscultation shows nothing very abnormal, excepting the breathing is irregular and feeble. The manifold entreaties made to the patient for deeper respiration are not noticed; mucus sputa is expectorated; no abnormal sensibility of the spinal column can be made out; during the decubitus of the patient, the *left upper extremity* is straight, while the right is moderately flexed, and sometimes is *taken with clonic twitchings. Similar convulsive movements are noticed with the right lower extremities, especially in the vicinity of the musculus rectus femoris. The arm and foot being lifted, they both fall down helpless. But the patient himself is able, after repeated urging, to raise these extremities, but visibly, with great exertion. The right could, after repeated and fruitless efforts, be slightly raised. To flex the arm is impossible, and he always fails with this arm in reaching objects placed before him. The right lower extremity is colder to the touch than the upper one. Requesting the patient to make pressure with his hands, it is evident that the left is weaker than the right.*

The sensitiveness to electricity is very much lessened in the muscles of extension, so that only with a strong current can the right leg be extended. *Only after several trials is the patient able to raise himself from the bed, and this is generally effected by the help of the left arm. He can stand erect, but very imperfectly. With closed eyes, he staggers and falls if unassisted. In trying to micturate in an erect position he falls to the left side.* He urinates very slowly, and after finishing, quite a quantity drips away. The urine is weakly acid, rather cloudy, but contains no abnormal ingredients. Asking him about pain, he points to his forehead, and never gives any other details respecting pain. Deglutition is good; the uvula hangs down lax and straight; the tongue, when *pointed from the mouth*, has a tremulous, unsteady motion; the functions of mastication are normal.

As to syphilitic appearances, a small papulous exanthem covered with small scales is remaining partly in an aggregated and partly in a diffuse configuration. On the forehead, besides the single papules, there are dark-brown pigment patches. There are small erosions on the right tonsils. The inguinal and cubital glands are much swollen, but the cervical only slightly.

The instituted therapeutics consisted of the administration of iodide of potassium, electrifying the paralyzed parts together with good diet. But these symptoms were becoming more aggravated. One morning, we found the patient helpless upon the floor. Probably he fell while trying to urinate. He could not relate why he was out of the bed, but

pointed to the urine vessel. *By long standing and with efforts to urinate, tremor and twitching occurs on the right side, especially in the right arm, which, with this exception, seems less sensitive.* The dribbling away of the urine has caused several excoriations on the scrotum. On the sacral region, bed sores have formed.

After using $1\frac{1}{2}\overline{3}$ of iodide of potassium during twelve weeks, the faculty of speech was improved, but not very greatly, so that he could utter single words, but no coherent sentences. The hemiplegic appearances were not much changed.

Five months after admission, we began the use of subcutaneous injections of sublimate in $\frac{1}{8}$ gr. doses. Already after the use of 1 gr., *the patient was able to elevate the right arm and flex it.* But the right leg did not improve so much. In the ankle joint particularly, he could make no spontaneous movement; *but he could open and close the right hand quite well. He could stand erect but for a short time only. The faculty of speech improved, but it was not quite normal.* Examination now of the mentally improved patient, revealed that the functions of the right eye and right ear are impaired, as compared with the left. The bones of the head are not very sensitive. On all parts of the body he feels quite readily a pricking with needles, and locates the points very well. The temperature of both sides of the body is the same.

After the use of 1 gr. more of the sublimate, the patient himself notices his improvement. *With the right arm and leg all movements are made, although rather slowly yet correctly. There was improvement daily.* The articulation was better, so that he could speak slowly, but coherently. In this condition he was taken home by his friends. We used, altogether, with this patient, $4\frac{1}{2}$ gr. of sublimate.

Case 71.—Martin Sch., day laborer, twenty-seven years old, was received into the Charité Jan. 29, 1869. I did not see the patient myself when received. He said that he contracted a chancre, which disappeared itself after the use of mercurial pills. The patient is of medium size, and of a very strong constitution. Concerning the syphilis pertaining to him, we found on examination, a great portion of the surface of the body, especially the trunk and extremities, covered with a lenticular, papulous exanthem in the desquamative stage, with occasionally dark pigment patches. On the prepuce in the neighborhood of the sulcus retro glandularis, there was a cicatrix, rather soft to the touch. The hair easily came out. The lymphatics were swollen in the inguinal and cervical region.

Ophthalmoscopic inspection revealed a *specific retinitis*, on account of which the patient was sent to the ophthalmic wards of Dr. Von Græfe, where he also complained, for the first time, of nausea and general weakness. The ophthalmoscopic examination showing an inflammatory action of the eye, the application of an artificial leech was prescribed. Before commencing this small operation, the *patient was suddenly taken with dizziness, swooning away, but soon recovered his consciousness.* The artificial leech was applied, extracting, however, but little blood. In returning the patient to the syphilitic wards, *he was again taken with vertigo, which soon subsided, but according to the nurses accompanying him, he was unable to utter a word.*

In our wards, shortly after, the patient was taken with paresis of the right facialis and hypoglossus. The expression was rather apathetic, the right angle of the mouth being drawn down in a lax manner, and the right nostril was narrowed, and did not dilate with respiration. The nerve fibres belonging to the musculus orbicularis, palpebrarum, corrugator supercilli and frontalis, were not so much paralyzed. *In asking him to show his tongue the same could be done only very imperfectly, the point being extended towards the right. Our efforts to make the patient speak were fruitless. It was impossible to get any sure evidence as to the integrity of the psychical functions, on account of this decided glosso-plegia.* Every admonition for him to execute voluntary muscular movements had to be repeated before it was obeyed, and the movement then was of an unsatisfactory character. *The condition of the patient changed during the day very much. First paresis of the right arm occurred, with complete sensibilty and reflex action remaining. Afterwards cataleptic symptoms were present.* In telling the patient to do something, he executed the request, but remained in the same position till changed by some one else.

The following day nothing more of these appearances was present, but paresis of the right arm was developed to complete paralysis extending to both right extremities. Also the partial paresis of the region of the face was increased and fully developed, the next day. All the other functions of the body were entirely normal. Examination of the organs of the chest and abdomen revealed nothing out of the natural order. The heart sounds were especially clear, and the extent of dullness normal. Urine was acid, of a pale brown color, containing nothing abnormal. Temperature 38.2 Cel., pulse 94.

On account of the named syphiloids and the retinitis, and a deficiency of any other etiological cause for the apoplectic symptoms, I thought myself justifiable in diagnosing *syphilitic disease of the brain*, and there-

fore I began at once the antisyphilitic cure with injections of sublimate in doses varying from $\frac{1}{8}$ gr. to $\frac{1}{4}$ gr. each.

After using 2 gr. I could notice some change for the better. The sensorium was free; the patient could execute movements in the sound part with quick and exact cordination of the muscles; the function of speech returned, but in a slight degree. Single, short words like "good," and "thank," he could speak plainly without stammering; also the paresis of the facialis was greatly diminished, the corrugator supercilli and frontalis regained their function. The right eyelid from long closure trembled and had an unsteady motion. The muscles, labii superioris, alæque nasi, zygomatici, &c., were still under the influence of the paresis. The point of the tongue was still a good deal drawn towards the right when thrust from the mouth. The movement of the right lower extremities was somewhat improved, but the left less so. Vision in the affected eye was much better, and the mental capacity almost wholly restored. After using 2 gr. more the patient was able to flex the right forearm to a right angle, but he could not raise the upper arm himself nor bend a finger in the hand. The patient was not able to stand erect. He can take only a few steps when supported on the right side; tongue drawn towards the right when extended; articulation in short sentences, slow but indistinct. The alphabet he repeats to the letter "T," when he gets uneasy, moves the head in an unquiet way, and afterwards the whole body trembles. The situation of the mouth is a trifle one-sided, and the right nostril slightly dilatable. All the muscles about the face work, excepting the musculus risorius santorini. After using 4 gr. more, *the retinitis was completely gone, and the yet existing paresis appearances of the facialis and tongue had entirely disappeared*, but articulation was rather difficult. The muscles which elevate the arm, and the extensors of the fingers were not quite restored, notwithstanding the use of electricity. The right foot also was dragged along in walking.

As I did not expect a further result from my antisyphilitic treatment, I sent the patient for further faradisation to the nervous wards of Professor Westphal.

VI. — CONSIDERATIONS RESPECTING SUBLIMATE INJECTIONS.

Having already considered the general pharmacodynamic effect of sublimate on the healthy and diseased organs, and the eventualities of a pernicious effect of this medication on the blood, nervous system and other organs, it seems, at a first glance, unnecessary to discuss again the question of contraindication. But I consider it necessary to name here special momenta in which injections of sublimate are either partly or wholly contraindicated. These momenta are especially age, sex, dyscrasia or already existing diseases.

Age.—Generally I never treated children in their first years of life with injections, although such experiments have been made, I hear, in Vienna with complete success. I refrained here from giving the injections, because a part of the advantages to be gained with the adult—as the ability to work, &c.—does not pertain to the age of childhood; and the pain of the operation is to be borne in mind, on account of the will power to withstand it being absent in the young organism. As yet, I have only treated one child, a girl of seven years, with the injections, and seeing that I would need to use a large number of them, I desisted on account of her great sensitiveness.

The Sex deserves some consideration, the female organism requiring less than the male. But I have frequently observed elsewhere as here, that women generally withstand and endure the pain better than men. Considering *menstruation* and *pregnancy*, and the effects of injections as connected therewith, I will describe them more fully in another chapter. I can say that menstruation is not at all

a contraindication for the subcutaneous treatment, since the catamenia are neither increased nor diminished thereby. Neither can I say that the hypodermic medication will either induce, or augment an already existing irritability of the ovaries and uterus.

ACUTE DISEASES, which happened to syphilitics—as, for instance, inflammation of the respiratory, circulatory and digestive organs, exanthemic fever, &c.—are always a contraindication for the injection. Chronic or acute diarrhœa, or a disposition towards it, must be taken as a contraindication, or at least the utmost care and judgment are necessary, if the hypodermic medication is employed, bearing in mind that relatively small doses of sublimate may produce here toxicological effects—as when abnormally large doses are taken by a healthy, robust individual.

ACUTE ARTICULAR RHEUMATISM is not a contraindication. Several observations have revealed the fact that the curative effects of the injection were as favorable in rheumatic as in syphilitic ailments. In Case No. 9 I have mentioned such a result, and I have treated two similar cases with the same good results.

In cases where a DYSCRASIA combines syphilis with itself, it is necessary to make a thorough examination, as ought to be done before using any antisyphilitic cure, in order to ascertain *whether the dyscrasic condition appeared before, simultaneously or after the manifestations of syphilis.* This examination requires much care, because it is well known that other pathological diseases originate from different causes, and that they are very difficult to distinguish from the polymorphous lues, *e. g.* syphilitic adenitis, resembling scrofulosis. Anæmia, chlorosis, leucæmia and other pathological changes in different organs, as already stated in the

chapters on visceral syphilis, give but little margin for a differential diagnosis from syphilitic blood alteration and disease. The therapeutics should be modified according to the diagnosis. Here my method has a great advantage over others, since I may combine with it any other treatment; as, for instance, in a combination of scrofula with syphilis, I may use at the same time iodide of potassium, cod-liver oil, &c.; or, with anæmic females, I can use relatively smaller doses of the sublimate, and conjointly give internally iron, &c.; use baths, &c. Concerning the disease commonly called *tuberculosis*, I have but three cases that I shall report:

Case 72.—Herman B., a cigarmaker, was received into our wards August 5th, 1868, he having suffered three years previously from a hard chancre, and using only local remedies for it. Later, spots appeared upon the body; slight scaling off of the epidermis on the penis; pain in the throat also, which complaints were but little heeded by the patient, and therefore they received no treatment. Two years subsequently the patient was attacked with inflammation of the lungs, in consequence of which a cachectic and tuberculous condition was developed. During the last six months he has had ulcers on the skin, for which he used, with good result, mercurial pills. Patient has now a cachectic appearance; flabby muscles; dull eyes; stooping gait; a flat paralytic thorax; but little adipose tissue, and is a complete picture of phthisis. *On the described paralytic thorax, near the fifth and sixth right ribs, there is a flattened depression. Here percussion gives the "cracked pot" sound, and auscultation detects mucous rales.* Of syphilitic appearances we see on the skin a great number of ulcers, of the size of a penny, covered partly with pyramidal rupial crusts and partly with dried pus. On the scalp the ulcers are of less size, but reach deeper into the tissue. The hair is but sparsely present. The erythema of the fauces and the erosions of the mucous membrane much resemble a stomatitis produced by mercury, which also may have caused the swelling of the mucous membrane about the teeth.

Notwithstanding the existence of vomicæ of the lungs, we did not hesitate to use the sublimate injections with the patient, and began the

same August 5th with the relatively large doses of ¼ gr. We were soon compelled to pause on account of salivation, and when we resumed treatment we reduced the dose to ⅛ gr. We paused but once again (for four days), when we detected blood in the sputa. After using 3½ grs. of sublimate, we had the pleasure to see the patient rid of all syphilitic affections. During the whole period the patient felt very comfortable. Only once did the cough increase, on account of taking a cold, but it soon assumed its normal character. The appearance of the patient was improved, and his weight, which, at the beginning of the treatment, diminished a trifle, soon increased to its former standard. His lung difficulty remained unaltered by the cure.

Although I remarked, page 41, where I treated of dietetic rules at length, that *inebriates* seemed to withstand the injection treatment quite well, *and therefore alcoholism is no contraindication*, giving Case 47 as an example,—I wish also to publish here a second case, in which the patient, an inebriate, suffered from caries that might have been syphilitic.

Case 73.—John K., a laborer, thirty-eight years old; from a healthy family; is, according to his own testimony, very intemperate, having been already twice treated in our hospital for *delirium tremens*.

His first syphilitic infection dates back to the year 1862. It vanished entirely, except leaving a syphilitic induration. For the ulceration, and also for the later arising relapses, in the form of exanthema, he used here in the Charité nothing else than a botanic treatment. At the time of admission, the patient has a crustaceous exanthem, which is over the entire body, in the form of small efflorescences; also psoriasis palmaris and plantaris. Two weeks before, the patient had inflammation of the joint between the first and second phalanges of the little finger on the left hand, which was excessively painful. Examination here reveals much swelling, and crepitation by rubbing the second and third phalanxes together.

Although the patient suffered a week prior to admission into our wards with delirium tremens, and was directly transferred from the so-called "delirium room," I used at once the hypodermic injections of sublimate, without allowing him any alcoholic drinks. We used altogether twenty injections of ⅛ gr.

of sublimate each, which produced the disappearance of the described exanthem, while the disease of the joint did not increase nor materially abate.

VII.—QUANTITY OF SUBLIMATE TO BE INJECTED.

Having, in my therapeutical endeavors, the principal aim to find a method for the sure and quick healing of syphilis, I have not restrained myself, in my experiments, to the trial of subcutaneous injections of sublimate alone, but have combined it also either *with the internal use of iodide of potassium, or with a sarsaparilla sweat-cure, preceding the injection treatment or simultaneously with it.* Besides, I have given some patients chlorate of potassa, and others, tannin, in order to prevent the troublesome and deleterious effects of salivation.

For each of these combination cures a number of patients were selected.

The following tabulated statement is the best proof of the results obtained, by means of the combined methods, in eight hundred cases (six hundred being women and two hundred men). These eight hundred patients are the material from which the following statistical tables are arranged.

I have taken only these eight hundred patients, because their treatment commences in the year 1865 and continues to the end of 1867, thus giving me, since their treatment, up to the time of the publication of this work, three years, two years and one year, respectively, in which I have had opportunity to observe a greater number of possible relapses than I possibly could have had, had I tabulated cases treated since 1867.

QUANTITY OF SUBLIMATE.

CLASSES.	WOMEN.			MEN.		
	Number of Cases.	Total of Sublimate Injected.	Average Quantity Injected.	Number of Cases.	Total of Sublimate Injected.	Average Quantity Injected.
			Grains.			Grains.
I. Cases in which sublimate alone was injected, without any other medication	134	336½	2½	34	103¾	3
II. Cases where the subcutaneous injection was preceded by a sarsaparilla sweat-cure . . .	58	122¾	2 1/10	33	70¼	2⅛
III. Cases in which the so called hunger-cure preceded the subcutaneous injection method . .	. .	. .	. .	33	79⅓	2⅖
IV. Cases in which the subcutaneous injection was used simultaneously with the sarsaparilla sweat-cure	24	55⅛	2 5/16	14	33 9/16	2⅜
V. Cases in which iodide of potassium was used internally, in addition to the subcutaneous injection of sublimate . .	90	151⅜	1⅞	12	27⅞	2⅛
VI. Cases in which the subcutaneous injection was used with internal use of chlorate of potassa	185	400¼	2⅙	34	86	2½
VII. Cases in which morphine was used with the injected fluid and tannin internally	62	116⅞	1 9/10	25	41¼	1⅗
VIII. Cases in which the internal use of iodide of potassium with the subcutaneous injection was preceded by a sarsaparilla sweat-cure . . .	34	50⅞	1½	. .	. .	. .

QUANTITY OF SUBLIMATE—*continued.*

CLASSES.	WOMEN.			MEN.		
	Number of Cases.	Total of Sublimate Injected.	Average Quantity Injected.	Number of Cases.	Total of Sublimate Injected.	Average Quantity Injected.
			Grains.			Grains.
IX. Cases where the internal use of chlorate of potassa, with sublimate injection, was preceded by a sarsaparilla sweat-cure	13	$28\frac{1}{2}$	$2\frac{1}{5}$	5	$10\frac{1}{8}$	$2\frac{1}{40}$
X. Cases in which the use of iodide of potassium, with injection of sublimate, was preceded by the so called hunger-cure	. .	. .	. .	10	$16\frac{1}{8}$	$1\frac{5}{8}$
Total	600	1272	$2\frac{1}{8}$	200	$468\frac{1}{4}$	$2\frac{1}{3}$

The quantity of the injected sublimate with two hundred *male* patients was $468\frac{1}{4}$ grs., or for each patient $2\frac{17}{20}$ grs., or about $2\frac{1}{3}$ grs. of sublimate was used, by which the visible symptoms of syphilis were destroyed.

The quantity of sublimate given to six hundred *female* patients was 1272 grs., or for each patient $2\frac{3}{25}$ grs., or about $2\frac{1}{8}$ grs. of sublimate.

This difference of $\frac{11}{20}$ gr. about $\frac{1}{5}$ gr. (equal to two syringes full of the solution No. 2) in favor of the female patient, is augmented from $\frac{1}{4}$ gr. to $\frac{1}{2}$ gr., when we consider the relatively great quantities of sublimate, which was necessary for some female patients, on account of their very extensive and very obstinate syphilitic formations.

The therapeutical result varies in the *different classes*, arranged according to the different combination cures employed. Here, however, we should naturally consider the greatness or smallness of the treated affection to fully judge of the produced effect. A glance at the tables shows the average quantity necessary for a cure ranges between the amount of 3 grs. and $1\frac{1}{2}$ gr. We see further that, patients of the first class, *i. e.*, such as were treated with the subcutaneous injections alone, needed a larger quantity of sublimate to effect a cure, the female patients receiving $2\frac{1}{2}$ grs., and the male 3 grs.

By the remaining eight classes, females as well as males, the quantity of injected sublimate is somewhat reduced in those patients who had previously to the injection undergone a sarsaparilla sweat-cure. Although these same patients, as we will show further on, had somewhat fewer relapses, this advantage, together with the small fractional amount of sublimate saved, is so insignificant, that it would be more than irrational to subject a patient, before using our sublimate injection method, to that cure which takes about four weeks. Aside from its costliness, and the length of time necessary, it rather weakens the patient and subjects him to colds, as we have had occasion to notice.

The class in question contained, to a large extent, patients who suffered but slightly with syphilis, or with the affection of that type which was readily amenable to treatment.

The most favorable results we see in those patients who used either *iodide of potassium, or tannin in conjunction with the hypodermic medication*, (classes v., vii. and ix.) The latter had the addition of morphia to the sublimate. But as iodide of potassium augmented the disposition to salivation, and the inclination to relapses, and as tannin may produce disturbances in the digestive apparatus, their advantages are

balanced by their disadvantages, and, therefore, the final conclusion is that, *with the simple subcutaneous injection neither another cure ought to precede nor be combined with it*, but for lessening pain and relapse, small doses of morphia may be added to the sublimate.

VIII.—RELAPSES OF SYPHILIS.

"Relapses occurring after every treatment, *are not the exception, but the rule.* Yes, for a century, investigation has been going on, and in recent times, as in the times of Ulrich von Huttens, the frequency of relapses is the worst curse appertaining to this disease."

This saying of Von Bærensprung, is almost identical with the assertions of French syphilographs, and stands as a fixed law concerning the frequency of relapses, (la loi des recidives) which is not only a constant threat for the layman, filling him with gloomy forebodings of the future, but is the great complaint of the physician, and robs him of the satisfaction he might feel in the accomplished cure.

To solve the question how the number of relapses occurring with my treatment, compares with other antisyphilitic treatments, a statistical basis is particularly demanded. But to obtain statistics in this particular branch of medicine, syphilis, is not very easy. The great difficulty arises from the fact, that the largest number of patients who suffer from a syphilitic relapse, condemn the formerly received medical treatment and go to other doctors, hoping thereby to get radically cured. There are certain classes of persons who are obliged to undergo in sickness a special treatment in hospitals set apart for them, I mean those persons under police surveillance, the puellæ publicæ, and soldiers; but even

here circumstances happen which make the gathering of statistics difficult or even impossible.

As to the mentioned prostitutes, they know only too well how to evade a police control; and in the larger cities, with the exception of Berlin, there are more syphilitic hospitals than one where the patients have their choice—indulging very readily in the tempting principle of change.

Concerning soldiers who are obliged to undergo treatment in military hospitals, their time of service is too short to give clear and sufficient observations for studying syphilitic relapses.

The first statistical resources that we find in our medical literature have already these shortcomings. They are the published records of French military surgeons of the beginning of the present century, as Devergie, Barthélemie, Desruelles, &c., about relapses occurring with mercurial or antimercurial treatment in soldiers treated by them. But the soldier remains only two years in Paris in garrison. There is another momentum to be considered, which further damages the value of their statistics. The authors were earnest adherents to *Broussais' Inflammatory Theory*, taking lues for an inflammatory process, as they did every manner of genesis and duration of the disease. They stated no distinction between a primary and a well marked constitutional syphilis, and as a consequence they had really syphilitic relapses equally divided for patients of every description. Among the 6000 patients whose cases were tabulated by Devergie for proving his assertion of the favorable circumstances resulting from the antisyphilitic treatment, there are, in point of fact, nearly 5000 who were affected only with gonorrhœa, epididymitis, acuminata, &c., in whom relapses, in one sense, are not to be mentioned. By reduction of the

patients from 6000 to 1000, the percentage of Devergie's relapses will rise from 7 per cent. to 35 per cent. But even this high number is not yet free from error, because those syphilographs, the images of our present anti-mercurialists, combated, *in abstracto*, against the use of mercury, but nevertheless, not only used it in such cases, as we to-day see an indication for its use, for instance, "if, during the simple treatment, red spots, papules or pustules appear," but even they employed it in local affections which "have arisen after a very short state of incubation," or "which have withstood other local treatment for quite a time." (Desruelles.)

The same error we find in the statistical references of the English physicians. All through, like a red thread, we find the mistake between primary and secondary syphilis. We find always the contradiction of charging mercury to be the cause of "the malignant course of syphilis and relapses," and after all proclaiming it as the ultimum refugium for the malignant forms.

But how far a partisan predilection and one-sidedness may bring about real drastic delusions, we see in the well known statement of Fergusson's, during his stay in Spain and Portugal, which paints up the result of the non-mercurial treatment in a very rose-colored way, so that it has caused the quick-spreading of the so-called "simple treatment." But even now the small remaining number of Furgusson's admirers do not yet see that he not only observed very superficially, but also that his assertions were in complete contradiction with his own English colleagues serving in Spain, as well as with the native Spanish physicians.

Concerning the statements of other *English physicians serving in the army*, they, too, are not of any real value. This is the case with the official statement of Thom. Clarke,

about 338 patients treated by him, during the years 1829 to 1832, of whom only 46 persons suffered with real syphilis; so also with other pamphlets published by Gregor & W. Franklin.

But we must recognise, too, that English surgeons sooner abondoned the anti-mercurial treatment than the continental physicians. The discussion of the Medical Society of London, on the 9th December, 1839, is indicative of this change of opinion. Dendy, one of the warmest defenders of a dietetic treatment, asserts that he has arrived at the conclusion that mercury is the surest remedy for the healing of syphilis, and against relapses,—an assertion which was accepted by all medical authorities of that time, without much opposition.

As to other countries on the continent, *the Swedish surgeons* give the most minute details in reference to relapses after different antisyphilitic remedies. The Royal Sanitary Commission tables comprise 46,687 cases. But even here we miss the distinction between local and syphilitic affections, and therefore, those published tables where, after a non-mercurial treatment only, 16 per cent. of relapses occurred, are of no value whatever, and we meet here at the same time, the curious final assertion that in a great number of cases, mercury was equally useful and important.

Of Italian surgeons, only Calderini, hospital surgeon at Milan, has published a statistical work based on cases treated there. There were 1050 patients, of whom 524 were treated with mercury, and 526 according to the antisyphilitic method.

As we have seen, in all these statements there is no reliance, and even our most recent investigations have either given very scant statistical tables, or they have been actuated by a partisan spirit. This is particularly the case with Her-

mann, of Vienna, so that his assertions cannot claim a scientific consideration. In the beginning of his work, entitled, "The Mercurial Diseases," (Vienna, 1865,) we find the following curious statement:

"Of the whole number of patients treated in the years from 1856 to 1864, amounting to 7796 patients, there came during a period of six years 335 persons twice, 70 persons three times, 30 persons four times, 8 persons five times, and 3 persons six times to our hospital. *In all these cases fresh infections took place, and in none was there a real relapse, or a higher degree of development of the existing forms of syphilis.*"

Diday,* who advocated a modified mercurial treatment, and an expectant kind, is rather small concerning statistics, but after all has a certain significance:

"Of 43 patients accurately watched and expectantly treated, 3 patients, 7 per cent. did not relapse; 40 patients, 93 per cent. did relapse, to whom there occurred two relapses to 17 patients, three relapses to 12 patients, four relapses to 4 patients, and seven relapses to 6 patients. With these relapsing patients syphilis ran in a mild form in 23 cases, 57.5 per cent.; in a severe form in 17 cases, 42.5 per cent.; in a tertiary form in 4 cases, 4 per cent. So that finally as an ultima ratio, mercury was taken; il avait finalement fallu y avoir recours."

Yvaren's† statistical material comprises 150 relapses in the form of inveterately severe lues, 35 cases were treated without mercury; in 31 cases mercury was given irregularly

* Historie Naturelle de la Syphilis. Paris, 1863, p. 138.

† Yvaren, Traite sur les Metamorphoses de la Syphilis, Paris, 1854; Kussmaul, p. 24; Bazin, p. 130.

and insufficiently; in 17 cases it was given in appropriate doses.

But how little mercury was the cause of the severity of the lues was clearly shown by the fact that, by the repeated use of mercury 80 patients of the above number were completely cured.

A further proof that mercury does not cause relapses in syphilis we find by the well known Danish author, Engelstedt. He says that the severest and the most obstinate relapses occur only in persons in whom the primary constitutional symptoms, light in themselves, were not treated with an energetic, especially a mercurial medication, "*and the disuse of mercury favors the relapses of syphilis.*" In the translation of Uterhardt,* numbers are rather uncertain in their expression of percentage of both the relapses, and the absolute cures, and therefore valueless. He says relapses occurred, after using sublimate, 55 times; after using calomel, 35 times; after using inunction cure, 4 times, and after using an undescribed mercurial preparation, 20 times.

A work which, by its great exterior, captivates for the first moment, but by a more careful perusal loses its significance for our purpose, is that one written with so great diligence, viz.: "Recherches sur la Syphilis appujées de tableaux de statistique tirés des archives des hôpitaux de Christiania, par W. Boeck." But those 3000 cases were written in a time when an exact observation according to the present state of science was impossible. The Norwegian author has, in publishing his work, the object to popularize the excellency of his method, "syphilization," as may be seen by the following table, which one of the most enthusiastic

* Die Constitutionelle Syphilis nach klinischen Untersuchungen. Uebersetzt von C. Uterhardt, Würzburg, 1861.

admirers of the method, Auzias Turenne, has published in his "Recueil des travaux de la Societé medicale allemande de Paris," (1865):

	Therapeutics.	Number of Cases.	Average duration.	Relapses.		Deaths.	
				Number of Cases.	Percentage.	Number of Cases.	Percentage.
			days.				
	Mercury	3200	125	1036	32 (32.375)	108	3⅜
	Iodide of Potas'm	186	108	40	21 (21.5)	2	1
SYPHILIZATION.	Without the preceding use of mercury	252	134	23	9½ (9.127)		
	In relapses after using mercury	54	191	10	18⅓ (18.33)		
	Without result after using mercury	6	347	2	33⅓ (33.33)		
	Tartarization	157	178	31	20 (19.745)		

Syphilization is, according to its author in regard to relapses, almost a preventive, but the contradiction of it is apparent when we read Turenne's assertion, "En outre de cette manière les chances de récedive sont réduites a presque rien ; car dans les trois dernières années pendant lesquelles M. Boeck s'est borné à l'inoculation de la matière de chancres indurès, iln'a pas mentionné une seule recidive tandis que dans sept ou huit annèes précedentes . . . . le nombre des rècidives montait áneuf et demi pour 100," and more so when we compare it with other reliable authors. But Boeck,

in a conversation with Lancereaux (Traite histor. et prat de la Syphilis, Paris, 1866, p. 749), says that the number of relapses are about twelve or thirteen per cent., and that accords with Boeck's own statement in the year 1860: "De la Syphilisation état actuel et statistique."

A. Oewre (Med. Times and Gazette, 1868, p. 929),* bases his assertion that syphilization exerts no influence over syphilis, chiefly on the fact of so frequent relapses of syphilis.

In recent times Depres has spoken emphatically against the use of mercury in the discussions of the Société Imperiale de Chirugie at Paris, in 1867, and imputed to mercury the most obstinate and frequent relapses. Full of zeal for statistical arguments against this drug, he undertook several raids upon the different hospitals of Paris, but neither in the "Hospital de Lourcine," nor "Hospital de St. Louis," could he find any statistical proof. His travels were a pitiable odyssey. Against his own statistical observations which he made, during eighteen months at the "Lourcine," important objections were made. The statistics he made at Hillairet's wards in the "St. Louis Hospital," were disavowed by Hillairet himself. As to the conclusions which Després drew from two hundred and forty-seven cases observed, which observations he received from Laillier, chief surgeon at the "St. Louis Hospital," the latter wrote a letter to Blot, in which he denies all responsibility.

As conclusively shown, there is an evident lack of reliable statistical references, and therefore I am obliged to get comparative starting points for my method, procuring the material in my own way. For this end I have used the extensive material of the "Registration of the Berlin

* Archiv für Dermatologie und Syphilis von Auspitz und Pick, 1869, 1 Jahrg, 1 Hft. S. 135.

Charité," in which the history of all cases for the last twenty years is fully preserved. From out of this abundance I have selected only two thousand suitable cases, which I have rearranged in tabular form, showing the affections, the instituted treatment and the intervals between the single relapses.

With such a clear pathological curriculum vitæ of two thousand patients, I could follow syphilis from its very incipiency to its later stages of development—from the sclerosis on the genitals to the final phases of visceral syphilis and forms producing a fatal issue. I have only taken female patients for my statistical material, because the male patients are free from all police surveillance, and therefore could not be as reliable as to estimating the proportion of relapses.

By a closer examination of this female material, I found some errors; as, for instance, a lack of precision in diagnosis and therapeutics, as recorded; so that, with the cases where care was taken, I could use only 1420 patients for the purpose of my statistics. One-half used the *sarsaparilla sweat-cure.**

The statistical results from this treatment, in reference to relapses of syphilis, are as follows:

Of the 710 patients who have used a sarsaparilla sweat-cure, 456 women, or 64.22 per cent., had relapses of

* Von Bærensprung used generally a decoction of

℞. Rad. sarsaparillæ;
Spec. ad decoct. ligni, āā ℥ii;
Rad. caricis, ℥ss;
Fol. sennæ, ℥j;
Aqua distill. lb.j.

After using this decoction, the patient must remain, in the morning, wrapped in woollen blankets, and sweat for one or two hours.

syphilis—occurring once in 260 patients, or 36.62 per cent.; twice in 81 patients, or 11.4 per cent.; three or more times in 115 patients, or 16.19 per cent.

Patients who were treated with mercurial preparations,* there occurred, in 710 patients, relapses with 464 persons, or 65.35 per cent.; once in 203 patients, or 28.6 per cent.; twice in 116 patients, or 16.34 per cent.; three or more times in 145 patients, or 20.42 per cent.

According to this we perceive that, after a mercurial and a botanic treatment, the relapses are almost equal, *i. e.* on an average of about 65 per cent.

This number, high as it is, may not, after all, give the right proportion. Among these 1420 patients, nearly 350 were women who *came of their own accord, without any interposition of the police*, to the Charité. They were partly servants and partly married women. Of this number only 50 persons, or 14¼ per cent., returned, on account of a recurring sickness, into the Charité; so that the remainder, if they had a relapse, probably sought relief outside of the hospital.

Deducting these 350 women, and we see that in 1070 patients, 870, or 81.3 per cent., were taken with relapses. But if we consider that even surgical surveillance may over-

* The preparations of mercury were different. We mostly used it internally, as hydrargyrum iodat. flav. (Simon, V. Bærensprung); hydrargyr. chlor. mite (Simon); hydrargyr. bichlorat. corrosiv. (V. Bærensprung); hydrarg. albuminat. (V. Bærensprung); unguent. hydrarg. cinererum. The ratio, as given, are about as follows:

Hydrargy. iodat. flav. to $\frac{7}{16}$ of the cases;
" bichlorat. corrosiv. to $\frac{6}{16}$ of the cases;
" chlorat. mite to $\frac{1}{32}$ of the cases;
" albuminat. to $\frac{5}{32}$ of the cases;
Inunction cure to $\frac{1}{32}$ of the cases.

look certain syphilitic affections, *e. g.* small hidden plaques muqueuses on the pharynx, or some syphiloid may not be recognised; and again, some prostitutes evade, for a longer or shorter time, police surveillance by sharp practice. We do not think the figures too high, when we fix the percentage of relapses from 81 to 90 per cent.

The small difference of 1.4 per cent. in favor of the botanic treatment is more than overbalanced when we consider the circumstance that the latter treatment has been in vogue only since the year 1858; so that all the relapses following this treatment could not have taken place in the relatively short period of five years.

But patients treated, between the years 1845 and 1858, with mercury, we can assume with certainty that with them the syphilis is entirely eradicated.

The numerical proportion of the patients who not only once, but *several times* have been attacked with syphilis, is the following:

Of 456 persons who have been treated with mercury, 1010 relapses have to be divided, so that two relapses occur to each individual. Of 430 persons who have been treated botanically, only 859 relapses take place; so that here there are two relapses for every patient.

A second important question is, *in what length of time do relapses appear after a botanic and after a mercurial cure?* This examination is, aside from its absolute value, in reference to the relatively high value of each.

We commenced our injection treatment already in the year 1865, but we treated then only 41 persons. The remaining 560 patients, who are counted in the relapses, we used this treatment upon in the following years, 1866 and 1867. But as in the expired time of respectively four, three

RELAPSES.

When received.	I. Patients who received only sublimate injections.				II. Patients with the sublimate injection and sarsaparilla sweat-cure.				III. Patients who received the subcutaneous sublimate injections with												IV. Patients who received before the sublimate injection a preceding sarsaparilla sweat-cure, and internally a simultaneous use of								Total.			
									a Sarsaparilla sweat-cure.				*b* Internal use of Iodide of Potassium.				*c* Internal use of Chlorate of Potassa.				*d* Tannin internally with morphium in injections.				*a* Iodide of Potassium.				*b* Chlorate of Potassa.							
	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.
A.																																		
From Oct. 1st, 1865, to June 30th, 186€,	19	15	7 (8*)	46⅔ (53*)	22	18	9 (10)	50 (55)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41	33	16 (17)	48½ (54)
From July 1st to Dec. 31st, 1866,	88	71	24 (27)	33⅓ (38)	36	29	12 (13)	41½ (45)	18	16	7 (8)	44 (50)	6	6	3 (4)	50 (60)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	148	122	46 (53)	38 (43)
From Jan. 1st to June 30th, 1867,	..	..	..	..	..	..	..	..	6	5	..	..	64	53	16 (21)	30½ (40)	101	71	31 (37)	43½ (32)	..	..	..	..	34	32	10 (13)	31⅓ (40)	13	10	5 (6)	50 (60)	218	170	62 (75)	36½ (44)
From July 1st to Dec. 31st, 1867,	27	23	10 (12)	43½ (52)	..	..	..	..	..	..	..	..	20	15	7 (10)	46⅔ (66⅔)	84	73	22 (35)	30½ (48)	62	48	9 (18)	18¾ (37½)	..	..	..	..	..	..	..	..	193	159	48 (75)	30½ (47)
Total,	134	109	41 (47)	33 (43)	58	47	21 (23)	44⅔ (49)	24	21	7 (8)	33⅓ (50)	90	73	26 (35)	35⅓ (48)	185	144	53 (72)	36⅛ (50)	62	48	9 (18)	18¾ (37½)	34	32	10 (13)	31¼ (40)	13	10	5 (6)	50 (60)	600	484	172 (220)	35½ (45)

* Of the numbers in parentheses, the first signifies the total of occurred, and probable yet occurring relapses, the latter the percentage nearly.

When received.	I. Patients who received only sublimate injections.				II. Patients with the subl mate injection and sa saparilla sweat-cure.				Total.	
	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage.	No. of patients.	No. under police surveillance.	No. of relapses.	Percentage. surveillance.	No. of relapses.	Percentage.
A.										
From Oct. 1st, 1865, to June 30th, 1866,	19	15	7 (8*)	46⅔ (53*)	22	18	9 (10)	5[illegible]3 (55	16 (17)	48⅕ (54)
From July 1st to Dec. 31st, 1866,	88	71	24 (27)	33⅘ (38)	36	29	12 (13)	41[illegible]2 (45	46 (53)	38 (43)
From Jan. 1st to June 30th, 1867,	..	..	..	..	..	..	..	. .0	62 (75)	36⅕ (44)
From July 1st to Dec. 31st, 1867,	27	23	10 (12)	43½ (52)	..	..	..	. .9	48 (75)	30⅕ (47)
Total,	134	109	41 (47)	33 (43)	58	47	21 (23)	444 (49	172 (220)	35⅕ (45)

* Of the nun

and two years not all the relapses have yet occurred, we have been compelled to estimate those which might occur.

For this end we selected cases from all the "sick journals" of the Royal Charité, in which the most accurate observations upon occurring relapses are stated. Of these patients, 456 persons were treated in the years from 1846 to 1858 with a mercurial medication, and 404 persons from 1858 to 1863 with the sarsaparilla sweat-cure.

An exact tabular statement of the ascertained result I have published in my former work (Charité Annals, Vol. XIV., p. 556).

The 780 *relapses occurring after botanic treatment were divided into eight different numerical groups*, according to the state of the patient between the first treatment and the first relapse, or between the first and second relapse, or between the second and third relapse, &c., up to the eighth.

The other 1010 *relapses, which occurred many years ago, and on account of the instituted mercurial treatment, have to be classed into ten numerical groups, since many of the patients had eight, nine or ten relapses.* See Table of Relapses.

For a precise calculation of the intervals occurring between the single groups of relapses, the already mentioned classes were divided into fifteen subdivisions.

The results which are interesting are the following:

1. The by far greater number of relapses appeared *during the first year after* all antisyphilitic cures, and especially after the botanic treatment, in the proportion of 91 per cent.; mercurial, 83 per cent. Of 11 remaining classes, respectively, 17 per cent. of relapses occurred during the second year. Still, after a mercurial treatment, there is yet

seven per cent.; after a botanic treatment, twelve per cent. The two yet remaining classes, respectively, develop five per cent. of relapses during intervals of many years. According to analogies as to these ascertained results, we calculated what percentage of relapses, after our subcutaneous injections of sublimate, had occurred till now, and what and how many would probably occur.

In the foregoing table on relapses we show all the relapses occurring till the year 1867, together with the probable total of the yet occurring relapses. To show the result of the combined treatment, we also gave a table. The result as there exhibited, where even the most unfavorable chances for our cure have been given full consideration, is that with a high probability, *the number of relapses following the subcutaneous sublimate injection is, at the highest estimate, but* 45 *per cent., or* 35 *per cent. less than with a treatment either mercurial or botanic.*

We separate in this manner a *progressive from a regressive* syphilis. The latter is always of a milder character and lighter form, as, for instance, the more or less eroded broad condylomes on the genitals, erosions of the mucous membrane of the pharynx, superficial disturbances of the skin, especially erythematous and maculous exanthema, and the moderate loss of hair. But the *progressive kind to syphilis always takes a deeper hold of the tissues.* The broad condylomes do not only show superficial erosions, but also deep ulceration. Papulous and squamous infiltration attack the skin, and sometimes gummous iritis develops. But as the farthest progressed, besides visceral syphilis, we must designate those external progresses in which new formations of a gummous nature arise, and the infiltrations show already a tendency to an ulcerative destruction. In this category we class the pustulous efflorescences as occurring in the form of

ecthyma and rupia; lupus and deeper diseases of the bones, parenchymatous astitis, gummous orchitis, and affections with which, not very rarely, destructive ulcerations of the pharynx and larynx exist.

Which character the relapses, after our subcutaneous injection have shown, whether they have assumed the character of progressive or regressive syphilis, must be solved by the import of our registered material.

These records of the ailments of such females as have been visited by the severest forms of syphilis, particularly the *tertiary*, are of considerable importance. From their therapeutical anamnesia, I hoped to give some valuable confirmations of my object. But my efforts have been crowned only with poor success. The registered records of such patients were in surprisingly small numbers, only 39 being present. These were very incomplete, and very often for fixing the more important anamnestic and therapeutical points, the necessary numbers of the record were wanting.* This was

* Von Bærensprung, says, (Annals of the Charité, vol. ix., 1860, p. 191,) "if I overlook the 150 cases of inveterate syphilis which developed into tertiary formations, whose history I have gathered, I find among them 122 in which the patient was repeatedly treated with mercury; in four cases nothing could be definitely made out from the anamnesia; only four cases are among them in which we could assume with any degree of certainty that no mercury at all was used."

These 122 cases Von Bærensprung has probably gathered in his private papers. I did not find them among the documents of the Registrar's office; on the contrary, the number of female patients in whom no mercurial treatment could be made out, I find to be already greater than given by Von Bærensprung. In the report of the physicians of the Imperial Royal Hospital at Vienna, of the year 1867, we read on the contrary, as follows: "Diseases of the bone were observed in cases of secondary syphilis fourteen times in men, and twice in women, among 703 patients, of whom only four men had gone through a mercurial treatment, the remainder being treated only locally."

particularly the case with such persons as never underwent a treatment with mercury, hence I am justifiable in making assumptions according to minute examinations and researches.

These records of the 39 sick, which I found in the Registrar's office, cannot all be classed as clear cases, because the treatment was partly mercurial and partly botanic.

But if we calculate these mentioned cases on the basis of the 1420 cases, we see *that with the older cases*, 2.74 *per cent. of the relapses occurred in the character of tertiary syphilis*, a proportion which, according to the already mentioned reasons, does not come up to the percentage there obtained.

In the following table we see, excepting those cases of serious disease, how the relapses are—whether of the character of *progressive* or *regressive syphilis*.

A. Sarsaparilla Sweat-cure (456 Cases).

Affection when first treated.	Affection at relapse.						
	1 Rel. Condylomata lata on the genitals.	2 Rel. Throat affection.	3 Rel. Exanthema maculosum.	4 Rel. Exanthema papulosum.	5 Rel. Exanthema squamosum (s. papulo-squamosum).	6 Rel. Exanthema pustulo-ulcerosum.	7 Rel. Exanthema tuberculosum.
1. Condylomata lata on the genitals (148 cases), . . .	38	64	27	4	15		
2. Throat affections (36 cases), .	11	13	7	2	3		
3. Exanthema maculosum (165 cases), ...	66	56	25	18			
4. Exanth. papulosum (s. maculo-papulosum), (65 cases), . .	22	19	9	10	4	1	
5. Exanthema squamosum (s. papulo-squamosum), (42 cases), .	10	14	7		10	1	

B. Mercury Cure (408 Cases).

Affection when first treated.	Affection at relapse.						
	1 Rel. Condylomata lata on the genitals.	2 Rel. Throat affection.	3 Rel. Exanthema maculosum.	4 Rel. Exanthema papulosum.	5 Rel. Exanthema squamosum (s. papulo-squamosum).	6 Rel. Exanthema pustulo-ulcerosum.	7 Rel. Exanthema tuberculosum.
1. Condylomata lata on the genitals (296 cases),	175	64	30	13	6	6	2
2. Throat affection (9 cases),	1	1	5		1	1	
3. Exanthema maculosum (63 cases),	42	8	5	3		2	3
4. Exanthema papulosum (14 cases),	7			3		4	
5. Exanthema squamosum (14 cases),	8	1	2	1	2		
6. Exanthema pustulosum (12 cases),	6					4	2

C. Subcutaneous Sublimate Injection (800 Cases).

Affection when first treated.	Affection at relapse.					
	1 Rel. Condylomata lata on the genitals.	2 Rel. Throat affection.	3 Rel. Exanthema maculosum.	4 Rel. Exanthema papulosum (s. maculo-papulosum).	5 Rel. Exanthema squamosum (s. papulo-squamosum).	6 Rel. Exanthema pustulo-ulcero-crustosum.
1. Condylomata lata on the genitals,	11	2	3	2	2	2
2. Throat affection,	5	7	1	1	1	
3. Exanthema maculosum,	16	25	11	5	2	
4. Exanthema papulosum (s. maculo-papulosum),	18	12	5	3	3	1
5. Exanthema squamosum (s. papulo-squamosum),	6	12	4	1	3	1
6. Exanthema pustulo-ulcero-crustosum,		3	1	1		2

Total, 109 Regressive, 37 Identical, 26 Progressive forms of Relapse.

This tabular statement exhibits what syphilitic affection existed at the first treatment, and what forms of relapse appeared, whether treated with the mercurial, botanic, or subcutaneous injection cure. The full-faced figures designate the number of those patients who had *a relapse of the same form of syphilis* as existed at the first treatment. The figures *on the right side of these*, show the *higher developed*, while those on the left show the *less developed forms of syphilis* in the relapse.

In order to compare the character of the relapses after the different treatments, I give the following:—

	Regressive Form.	Identical Form.	Progressive Form.
I. Botanic Treatment,	47 per ct.	21 per ct.	32 per ct.
	68 per ct.		
II. Mercurial Treatment,	18.6 per ct.	46.6 per ct.	34.8 per ct.
	65.2 per ct.		
III. Subcutaneous Injection Cure,	61.7 per ct.	20.9 per ct.	17.4 per ct.
	82.6 per ct.		

The result is therefore that *those relapses, which occur after the subcutaneous sublimate injection method, show:—*

17 per cent. of *less progressive forms*
25 per cent. " " *adequate* "
43 per cent. " *more regressive* "

than the other methods of treatment which have heretofore been used in the Charité.

Of the patients with progressive relapses *after* the subcutaneous injections, none were taken with a bad form of tertiary syphilis.

Only in a few patients, which showed already before the sublimate injection malignant formations, did a malignancy appear in the relapse, and then in a mild manner.

Of the remaining patients of the category of progressive relapses, not one was really taken with a severe affection. The following cases I show as examples:

1. Carol B., received July 9, 1867, the first time into the Charité, affected with condylomata lata at the genitals, angle of the mouth and between the fingers and toes; a light papulous exanthem on the thigh. She received $3\frac{3}{4}$ gr. of sublimate hypodermically, and was discharged cured.

She returned in five and a half months with the single affection, condylomata lata at the entrance of the vaginæ, erosed considerably. There were injected $1\frac{3}{8}$ gr. sublimate, which dispelled the affection. On the 9th December, 1868, *i. e.*, nine months subsequently, she came back again, having the following, viz.: ulcerated condylomata lata at the labia, nates and left thigh; *great crusts at the nates, crust-like formations on the leg and right fore arm.* The inferior and superior extremities were quite covered with a maculous cicatrized pigment colored eruption At the posterior commissura was a large putrid ulcer. We repeated the subcutaneous injections. At the 9th injection ($1\frac{1}{4}$ gr. having been used) so severe a salivation occurred (lasting four weeks) that we suspended the injection treatment entirely. We used for two weeks iodide of potassium, and finally a sarsaparilla sweat-cure for four weeks, and thus we were able to discharge the patient, after four months, as cured.

2. Auguste, E., was in my wards from June 15, till July 15, 1867, for ulcerations in the fossa navicularis and erosions. She was treated with sublimate injections, receiving 1 gr. hypodermically. Four weeks later she returned to the Charité with crustaceous erosions on the left labium min. with soft ulcers on the fossæ, and a papulo-pustulosum exanthema on the back, abdomen, and lower extremities. After injecting $1\frac{7}{8}$ gr. of sublimate subcutaneously, the exanthem disappeared.

3. Anna H., was received November 12, 1866, for lata at the genitals and fossa, erosion on the nose, psoriasis palmaris, rhagades between the toes of the left foot and a pustulous exanthem about the head. She received 2 gr. of sublimate subcutaneously, and the exanthem disappeared, pigment patches only remaining.

On account of a primary affection, she returned five times to the hospital, and returned once again January 23, 1869, *i. e.*, two years and three months after her first discharge, this time having crustaceous ulcerations, ecthymatous eruption on the lower extremities, crusts on the nates. She received subcutaneously $\frac{1}{2}$ gr. of sublimate. A stomatitis mercuriales ensued, and she was then treated with a sarsaparilla sweat-cure, and received thereafter $\frac{1}{2}$ gr. of sublimate more, and was discharged cured.

4. Mrs. Kl., twenty-one years old, already four times treated for primary syphilitic processes, was again received into the hospital October 3, 1866, with condylomata lata near the anus and on the tonsil, maculous exanthem, loss of hair and adenitis. She was treated subcutaneously, and was discharged cured after using $2\frac{3}{8}$ grs. of sublimate. She returned again, after four and a half months, to the Charité, with eroded tonsils and three pustules, of the size of a pea, on the left forearm. They dried up, after the use of $\frac{3}{4}$ gr. of sublimate, hypodermically. When $1\frac{1}{4}$ gr. had been used, the crust fell off, and the patient was discharged cured. Subsequently she returned to my wards several times, but I could not detect anything of these syphilitic formations.

5. Emilie Sch., twenty-one years old, received into my wards February 24, 1867, with indurated ulcers on the right of the labia minora, condylomata lata on the tonsils, papulous exanthem over the whole body; was discharged cured after the injection of $1\frac{7}{8}$ gr. of sublimate. She returned in the course of a month, and we found eight crusts, of the size of a pea, of yellow color, resembling impetigo, seated on a superficially eroded cuticle upon the neck and abdomen. After the hypodermic injection of $1\frac{3}{4}$ gr. of sublimate, we discharged her cured, and when last heard from she remained perfectly well.

6. Augusta L., eighteen years old, received into the Charité April 18, 1866, with condylomata lata on the genitals and maculous exanthem; was treated for six or seven weeks with the sarsaparilla sweat-cure. During the while, papules developed themselves on the back. An injection treatment was instituted, which resulted, after using 3 grs. of sublimate, in a cure. After six weeks, the patient returned with the following symptoms: eroded condylomata on the left arcum palato-pharyngeum, impetiginous exanthem on the lower extremities, psoriasis palmaris and adenitis. This time the use of 2 grs. was sufficient. But the patient came back again, three months subsequently, with an ulcer on the lower eyelid, which had caused some loss of substance. Also,

the epiglottis exhibited superficial erosions. All of these processes did not appear to me evidently of a syphilitic character, and I prescribed iodide of potassium. After the use of ℥ii, a healing was effected.

7. Fred. H., eighteen years old, received into my wards January 27th, 1867, with eroded condylomata on the left of the labia minora and urethritis; was discharged cured after the use of $\frac{7}{8}$ gr. of sublimate. After the lapse of three months, he returned to the hospital, with a papulous exanthem on the face and extremities. We used again the subcutaneous sublimate injection cure, 5 grs. completing the cure.

Among the remaining cases in which a progress of syphilis was stated, in twelve cases the most significant affection was a papulous exanthema, and in six cases a squamous exanthema. Subcutaneous injections of sublimate, to the amount of from 1 gr. to $2\frac{1}{2}$ grs., always brought these syphilitic processes to a stand-still.

In the remaining progressive relapses, after broad condylomes on the genitals or superficial erosions in the pharynx, a maculous exanthem was the result.

It is of importance that, *for the cure of the relapses generally, only from half to three-fourths the quantity of sublimate is necessary* to eradicate the first eruptions of syphilis, as is shown by the following tabular statement:

DOSES OF SUBLIMATE AFTER RELAPSES.

THE QUANTITY USED:

CLASSES.	At the first Treatment.			At the first Relapse.			At the second Relapse.			At the third Relapse.			At the fourth Relapse.			At the fifth Relapse.		
	No. of Cases.	Total of Sublimate Injected.	Average Quantity Used.	No. of Cases.	Total of Sublimate Injected.	Average Quantity Used.	No. of Cases.	Total of Sublimate Injected.	Average Quantity Used.	No. of Cases.	Total of Sublimate Injected.	Average Quantity Used.	No. of Cases.	Total of Sublimate Injected.	Average Quantity Used.	No. of Cases.	Total of Sublimate Injected.	Average Quantity Used.
		Grs.	Grs.		Grs.	Grs.		Grs.	Grs.		Grs.	Grs.		Grs.	Grs.		Grs.	Grs.
I.	41	$100\frac{3}{8}$	$2\frac{4}{7}$	37	$55\frac{7}{8}$	$1\frac{1}{2}$	16	22	$1\frac{1}{8}$	3	$5\frac{1}{8}$	$1\frac{2}{3}$						
II.	21	$48\frac{1}{2}$	$2\frac{1}{3}$	17	$23\frac{7}{8}$	$1\frac{7}{17}$	8	$19\frac{4}{5}$	$2\frac{1}{2}$	1	$1\frac{1}{2}$	$1\frac{1}{2}$	1	$1\frac{7}{8}$	$1\frac{7}{8}$			
III. *a*	7	$13\frac{1}{6}$	$1\frac{6}{7}$	6	11	$1\frac{5}{6}$	2	$3\frac{1}{4}$	$1\frac{5}{8}$	1	$1\frac{5}{8}$	$1\frac{5}{8}$	1	$1\frac{3}{8}$	$1\frac{3}{8}$	1	$1\frac{7}{8}$	$1\frac{7}{8}$
III. *b*	26	40	$1\frac{7}{13}$	25	$53\frac{1}{2}$	$2\frac{1}{7}$	5	$7\frac{3}{4}$	$1\frac{11}{20}$									
III. *c*	53	$112\frac{1}{4}$	$2\frac{1}{9}$	50	$78\frac{3}{4}$	$1\frac{3}{5}$	5	$5\frac{3}{8}$	$1\frac{3}{10}$	1	$\frac{3}{4}$	$\frac{3}{4}$	1	$1\frac{3}{4}$	$1\frac{3}{4}$	1	$1\frac{3}{8}$	$1\frac{3}{8}$
III. *d*	9	$14\frac{1}{2}$	$1\frac{2}{3}$	8	$10\frac{3}{8}$	$1\frac{5}{16}$	5	$6\frac{3}{4}$	$1\frac{7}{20}$	2	$3\frac{1}{7}$	$1\frac{3}{4}$						
IV. *a*	10	$17\frac{1}{2}$	$1\frac{3}{4}$	7	$9\frac{3}{8}$	$1\frac{1}{3}$	3	$2\frac{3}{4}$	$\frac{11}{12}$									
IV. *b*	5	7	$1\frac{2}{5}$	4	$6\frac{3}{4}$	$1\frac{11}{16}$												
Total.	172	$353\frac{1}{4}$	$2\frac{1}{16}$	154	$249\frac{1}{2}$	$1\frac{7}{11}$	44	$67\frac{3}{8}$	$1\frac{1}{2}$	8	$12\frac{1}{2}$	$1\frac{9}{16}$	3	5	$1\frac{1}{3}$	2	$3\frac{1}{4}$	$1\frac{5}{8}$

Concerning the *question whether a too small quantity of injected sublimate may cause the appearance of relapses*, it is very difficult to answer, since we saw no deviation, the quantity for relapses being a trifle less than for other cases. With several relapses the average quantity of the injected sublimate is less than when but a single relapse occurs, as shown. That my figures concerning quantity and quality of relapses after subcutaneous injections have not been taken too favorably, can be seen from the following *statement of the present status of my wards for syphilis.*

Number of prostitutes subcutaneously treated during the years from 1865 to 1869, between . . . . . 1300 and 1400

Number of relapsing women in my wards,* 20

And they suffered as follows:—

From condylomata lata on the genitals or surroundings, . .	10
" " " " and erosions on the tonsils,	2
" " " " and exanthema maculosum,	2
Exanthema papulosum, ...	1
" papulo-squamosum, ...	1
" " " and ulceration on tonsils, . .	1
" crustosum, ...	1
" " and periostitis, ...	1
" " " retinitis, ...	1

* I point out here again that my wards probably represent the full contingency of all syphilitic women in Berlin, and for that reason give a fair estimate of all the relapses after the sublimate injection cure. Not only are the prostitutes examined weekly by proper sanitary inspectors, but also they are sent immediately to my wards. No other hospital is allowed to receive persons so diseased. Only a few of the better situated puellæ publicæ have been allowed to be treated in their homes, but these have not been subcutaneously treated by me. Concerning the other wards of the Charité, in which sometimes women with visceral syphilis are found, only one patient in the insane ward of Professor Westphal has been treated subcutaneously. Diagnosis here is not quite certain, but it seems that a hemiplegia induced by syphilis exists with the patient.

INTERVALS BETWEEN THE SINGLE RELAPSES.

It would be advantageous if we could use the intervals of the single relapses *as a prognostic mean* in reference to the further course of the syphilis. All the views and assertions of former syphilographs are lacking a reliable statistical basis, and are therefore only subjective in their origin. Hence the contradictions of the authors. *For instance, Von Bœrensprung regards longer intervals, especially after mercury, as a less favorable prognostic significance. Diday reverses the matter, and regards short intervals as unfavorable in a prognostic point of view.*

In my work in the Charité Annals, I have pointed out the non-correspondence of the views of Von Bærensprung with the result of his own records in his "Sick Journal," besides showing the insufficiency of the material of Diday. The observations of the 39 cases of tertiary syphilis which are found in the records of my predecessors, induced me to think that the character of the relapsing syphilis does not depend on the intervals between the outbreaks.

As to the intervals in which the simple relapsing affections occurred in the patients of my predecessors, and as to the intervals occurring after my subcutaneous injection cure, I have taken of the former 912 patients, observing them more minutely, and of the latter 800. When compared, the result is as follows:—

A. Sarsaparilla Sweat-Cure. 456 Cases.

At the first treatment were:

I. Condylomata lata on the genitals, . . . in 148 cases.

Relapses occurred as:

Condylomata lata on the genitals . . . " 38 "

Condylomatous erosions and ulcerations in the pharynx . . . . . in 64 cases.
Exanthema maculosum . . . . . " 27 "
during 5 months . . " 25 "
" 11 " . . " 2 "
Exanthema papulo-squamosum . . . " 15 "
during 5 months . . " 13 "
" 11 " . . " 2 "
II. Condylomatous erosions and ulcerations in the pharynx . . . . . " 12 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 11 "
Condylomatous erosions and ulcerations in the pharynx . . . . . " 13 "
Exanthema maculosum . . . . . " 12 "
They were divided as follows, occurring during 6 mos.
Exanthema papulo-squamosum . . . . " 5 "
III. Exanthema maculosum with or without affections of the Category I. and II. . . . " 165 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 66 "
They were divided as follows: during 9 months . . " 59 "
" 28 " . . " 7 "
Condylomatous erosions and ulcerations in the pharynx . . . . . " 56 "
They were divided as follows: during 8 months . . " 50 "
" 24 " . . " 6 "
Exanthema maculosum . . . . . " 25 "
during 7 months.
Exanthema papulo-squamosum . . . . " 18 "
during 8 months.
IV. Exanthema papulosum with or without the affections of Category I. to III. . . . . " 165 "
Relapses occurred as:
Condylomata lata on the genitals
during 11 months . . " 22 "
Condylomatous erosions and ulcerations in the pharynx during 10 months . . " 19 "
Exanthema maculosum
during 11 months . . " 9 "

Exanthema papulosum
during 12 months . . in 10 cases
Exanthema papulo-squamosum
during 4 months . . " 4 "
Exanthema pustulosum
during 2 months . . " 1 "
V. Exanthema squamosum with or without the affection of Category I. to IV. . . . . " 32 "
Relapses occurred as:
Condylomata lata on the genitals
during 5 months . . " 10 "
Condylomatous erosions and ulcerations in the pharynx during 5 months . . " 14 "
Exanthema maculosum
during 12 months . . " 7 "
Exanthema papulo-squamosum
during 13 months . . " 10 "
Exanthema vesiculosum
during 18 months . . " 1 "

B. Mercury Cure. 456 Cases.

At the first treatment were:
I. Condylomata lata on the genitals . . . " 296 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 175 "
Condylomatous erosions and ulcerations in the pharynx . . . . . " 64 "
Exanthema maculosum . . . . . " 30 "
during 9 months . . " 24 "
" 48 " . . " 6 "
Exanthema papulosum . . . . . " 13 "
during 9 months . . " 9 "
" 30 " . . " 4 "
Exanthema squamosum . . . . . " 6 "
during 4 months . . " 5 "
" 14 " . . " 1 "
Exanthema pustulosum . . . . . " 6 "
during 7 months.

II. Condylomatous erosions and ulcerations in the pharynx . . . . . in 93 cases.
Relapses occurred as:
Condylomata lata on the genitals . . . " 1 "
Condylomatous erosions and ulcerations in the pharynx . . . . . " 1 "
Exanthema maculosum . . . . . " 5 "
during 6 months . . " 3 "
" 18 " . . " 2 "
Exanthema papulo-squamosum . . . . " 1 "
during 7 months.
Exanthema pustulosum . . . . . " 1 "
during 3 months.
III. Exanthemata maculosum with or without the affections of Category I. and II. . . . " 63 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 42 "
during 9 months . . " 37 "
" 36 " . . " 7 "
Condylomatous erosions and ulcerations in the pharynx . . . . . " 8 "
during 6 months.
Exanthema maculosum . . . . . " 5 "
during 8 months . . " 4 "
" 13 " . . " 1 "
Exanthema papulosum . . . . . " 3 "
during 6 months.
Exanthema pustalosum . . . . . " 2 "
during 11 months.
Exanthema tuberculosum . . . . . " 3 "
during 36 months.
IV. Exanthema papulosum with or without the affection of Category I. to III. . . . " 14 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 7 "
during 10 months . . " 4 "
" 17 " . . " 1 "
Exanthema papulosum . . . . . " 3 "
during 10 months.

Exanthema vesiculo-pustulosum . . . in 4 cases.
during 10 months.

V. Exanthema squamosum with or without the affection of Category I. to IV.

Relapses occurred as:

Condylomata lata on the genitals . . . " 8 "
during 13 months.

Erosions and ulcerations in the pharynx . . " 1 "
during 3 months.

Exanthema maculosum . . . . . " 2 "
during 19 months.

Exanthema papulosum . . . . . " 1 "
during 1 month.

Exanthema squamosum . . . . . " 2 "
during 4 months.

VI. Exanthema pustulosum with or without the affections of Category I. to V. . . . " 12 "

Relapses occurred as:

Condylamata lata on the genitals . . . " 6 "
during 20 months.

Exanthema pustulosum . . . . . " 4 "
during 24 months.

Exanthema luposum . . . . . " 2 "
during 10 months.

C. Subcutaneous-Injection-Cure. 182 Cases.

At the first treatment were:

I. Condylomata lata on the genitals and surroundings . . . . . " 22 "

Relapses occurred as:

Condylomata lata on the genitals . . . " 10 "
during 8 months.

Erosions and ulcerations in the pharynx . . " 3 "
during 2 months.

Exanthema maculosum . . . . . " 3 "
during 4 months.

Exanthema papulo-squamosum . . . . " 4 "
during 4 months.

Exanthema pustulosum . . . . . " 2 "
during 3 months.

II. Erosions and ulcerations in the pharynx with or without the affections of Category I. . . in 14 cases.
Relapses occurred as:
Condylomata lata on the genitals . . . " 5 "
during 5 months.
Erosions and ulcerations in the pharynx . . " 1 "
during 6 months.
Exanthema maculosum . . . . . " 1 "
during 3 months.
Exanthema papulosum . . . . . " 1 "
during 14 months.
Exanthema squamosum . . . . . " 1 "
during 7 months.
III. Exanthema maculosum with or without the affections of Category I. to II. . . . " 55 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 15 "
during 12 months.
Erosions and ulcerations in the pharynx . . " 23 "
during 9 months.
Exanthem maculosum . . . . . " 10 "
during 9 months.
Exanthema papulosum . . . . . " 5 "
during 8 months.
Exanthema squamosum . . . . . " 2 "
during 4 months.
IV. Exanthema papulosum with or without the affections of Category I. to III. . . . " 41 "
Relapses occurred as:
Condylomata lata on the genitals . . . " 16 "
during 17 months.
Erosions and ulcerations in the pharynx . . " 13 "
during 11 months.
Exanthema maculosum . . . . . " 5 "
during 21 months.
Exanthema papulosum . . . . . " 3 "
during 15 months.
Exanthema squamosum . . . . . " 3 "
during 2 months.

Exanthema pustulosum	in	1 cases.
during 16 months.		
V. Exanthema squamosum with or without the affections of Category I. to IV. . . .	"	30 "
Relapses occurred as:		
Condylomata lata on the genitals . . .	"	8 "
during 10 months.		
Erosions and ulcerations in the pharynx . .	"	13 "
during 13 months.		
Exanthema maculosum	"	3 "
during 9 months.		
Exanthema papulosum	"	2 "
during 7 months.		
Exanthema squamosum	"	3 "
during 7 months.		
Exanthema pustulosum	"	1 "
during 6 months.		
VI. Exanthema pustulosum with or without the affections of Category I. to V. . . .	"	10 "
Relapses occurred as:		
Condylomata lata on the genitals . . .	"	1 "
during 8 months.		
Erosions and ulcerations in the pharynx . .	"	3 "
during 8 months.		
Exanthema maculosum	"	1 "
during 2 months.		
Exanthema papulosum	"	3 "
during 8 months.		
Exanthema pustulosum	"	2 "
during 15 months.		

Following are two tabulated statements, of which the first shows, *how many relapses* those patients had, who were subcutaneously treated; in the second it shows the *difference in intervals* with such patients, who have undergone *one* or *more relapses.*

MANIFOLD RELAPSES.

Categories.	1st Relapse.	2d Relapse.	3d Relapse.	4th Relapse.	5th Relapse.
I. (41 cases)	in 19 cases.	in 12 cases.	in 10 cases.		
II. (21 ")	" 11 "	" 8 "	" 1 "	in 1 case.	
III.*a* (7 ")	" 3 "	" 1 "	" 1 "	" 1 "	in 1 case.
III.*b* (26 ")	" 17 "	" 7 "	" 2 "		
III.*c* (53 ")	" 26 "	" 15 "	" 11 "		" 1 "
III.*d* (9 ")	" 3 "	" 4 "	" 2 "		
IV.*a* (10 ")	" 7 "	" 1 "	" 2 "		
IV.*b* (5 ")	" 3 "	" 2 "	" "		
Total	in 89 cases.	in 50 cases.	in 29 cases.	in 2 cases.	in 2 cases.

This statement shows, besides the important fact, that in the greatest number of patients only one or two relapses occur; three relapses are rare, but four and five the exceptions. To show the intervals of manifold relapses, the following table is inserted.

The interval between the first treatment and first relapse was:	Categ. I.		Categ. II.		Categ. III.*a*		Categ. III.*b*		Categ. III.*c*		Categ. III.*d*		Categ. IV.*a*		Categ. IV.*b*	
	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.	Cases with one relapse.	Cases with more relapses.
up to 1 month, inclusive,	2	4	..	4	..	2	3	..	1	3	..	2	1	..	..	1
1 " 2 months, "	..	5	2	2	1	1	2	1	1	3	1	..	..	..	1	..
2 " 3 " "	3	3	1	1	1	..	2	2	..	8	..	..	..	1	..	..
3 " 4 " "	2	2	..	1	..	..	5	3	3	5	..	2	1	..	..	..
4 " 5 " "	3	1	..	1	..	..	3	1	4	3	1	1	..	1	1	..
5 " 6 " "	1	2	2	1	..	..	2	1	3	2	..	1	..	1	..	1
6 " 7 " "	2	1	1	..	..	..	..	..	2	1	..	..	2	..	..	..
7 " 8 " "	2	2	1	..	..	..	..	1	4	2	..	..	1	..	1	..
8 " 9 " "	..	..	2	..	..	..	..	..	3	..	1	..	..	..	..	..
9 " 10 " "	..	1	..	..	..	..	..	..	3	..	..	..	..	..	..	..
10 " 11 " "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11 " 12 " "	1	1	..	..	1	1	..	..	..	..	..	..	1	..	..	..
12 " 13 " "	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
13 " 14 " "	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
14 " 15 " "	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
15 " 16 " "	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
16 " 17 " "	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
17 " 18 " "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18 " 19 " "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19 " 20 " "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20 " 21 " "	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total,	19	22	11	10	3	4	17	9	26	27	3	6	7	3	3	2
Average duration of the intervals (months),	5–6	4	4–5	2	2	1	3	4	6–7	3–4	5	3–4	7	3	4	3

As seen by this table the intervals are longer with those patients in whom but one relapse occurred, and shorter in those in whom several relapses followed.

IX. EFFECT OF SUBCUTANEOUS INJECTIONS IN PREGNANCY.

Dr. Jul. Loewy publishes from Siegmund's Clinic at Vienna some very valuable points thereon. From January, 1868, till April, 1869, 99 syphilitic pregnant females were treated: 58 expectantly, 37 with inunction.

With the 58 pregnant females of the first class, abortion or premature delivery occurred 17 times, or 29 per cent.; with the 37 of the second class, abortion or premature delivery 5 times, or 13.5 per cent.

The number of syphilitic pregnant females *treated by me subcutaneously* since 1865, up to April, 1869, were 85. In this number abortion or premature birth occurred but 8 times, or with about 10 per cent. The result therefore is, that with the subcutaneous sublimate treatment, abortion and premature delivery took place 19 per cent. less frequently than with the expectant treatment, and 3 per cent. less frequently than with the inunction cure.

I do not put much value on this latter circumstance of 3 per cent. for my method, since changeable factors might have caused the variation.

The 85 pregnant females were in all stages of gestation during the hypodermic treatment, as here seen:

In the 3d or 4th	lunar	month	. .	13
" " 5th	"	"	. .	7
" " 6th	"	"	. . .	12
" " 7th	"	"	. .	18
" " 8th	"	"	. . .	17
" " 9th	"	"	. .	8
" " 10th	"	"	. . .	10

Accordingly we perceive that

20 were in the first half of gestation.
65 " " " second " "

Abortion or premature birth occurred respectively,

In the 3d	lunar	month	with	1	person.
" " 4th	"	"	"	2	"
" " 5th	"	"	"	1	"
" " 7th	"	"	"	1	"
" " 8th	"	"	"	2	"
" " 9th	"	"	"	1	"

Here we see that women in the earlier months of pregnancy, who are more disposed to abort, bore the subcutaneous injections of sublimate without any bad result.

Concerning the second important question, as to *how gestation proceeded after the injection treatment*, I cannot give so large a statistical exhibit, because a part of the patients left our hospital before confinement, and therefore did not come under my observation.

Of 50 patients I can make the following statement:

16 women were, from 1 to $1\frac{1}{2}$ months after the treatment, delivered, in their 7th or 8th months of pregnancy.

14 women were, from 1 to $2\frac{1}{2}$ months after the treatment, delivered, in their 8th or 9th months of pregnancy.

20 women were delivered at full term.

Concerning the influence of our cure on the *life and health of the fœtus*,

43 pregnant females gave birth to 32 living and 11 dead children.

Of the 32 living children, 20 children, or 62½ per cent. died.

The remaining 12 were discharged with the mother, and for only 2 children was an inunction cure thought necessary.

Of these 12 children, discharged seemingly healthy, I have been able to ascertain nothing of but 5: 2 died; 3 are yet alive and well.

Of 9 children who died in the Charité, a post-mortem examination showed the existence of

Encephalitis	2	times.
" with Hepatitis	1	"
Peritonitis with Hepatitis and Atelectasia Pulmonum	1	"
Ostitis gummosa multiplex, Rhachitis, Thrombophlebitis	1	"
Ostitis gummosa multiplex, Hepatitis gummosa, Broncho-pneumonia	1	"
Ostitis gummosa multiplex, Hepatitis gummosa, Pemphigus, Abcessus glandulæ Thymus	1	"
Atrophia universalis, Exanthema squamosum Furunculosis	1	"

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